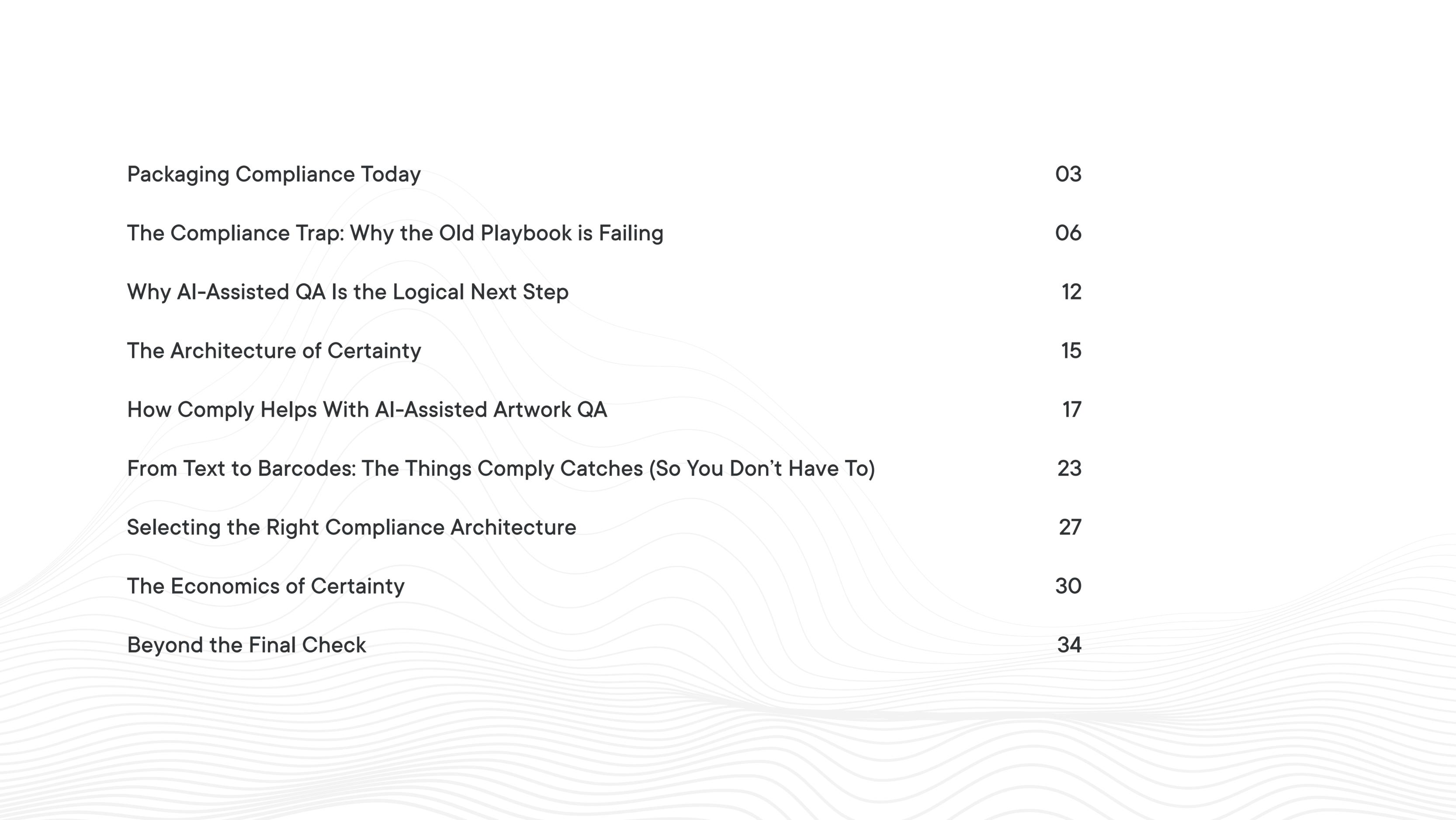


The Future of Packaging Compliance

Why Manual QA Breaks, How AI-Assisted Artwork Checks Help, and What Comes Next

The background of the page features a series of light gray, wavy lines that create a sense of movement and depth, starting from the bottom and curving upwards towards the text.

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Chapter 1



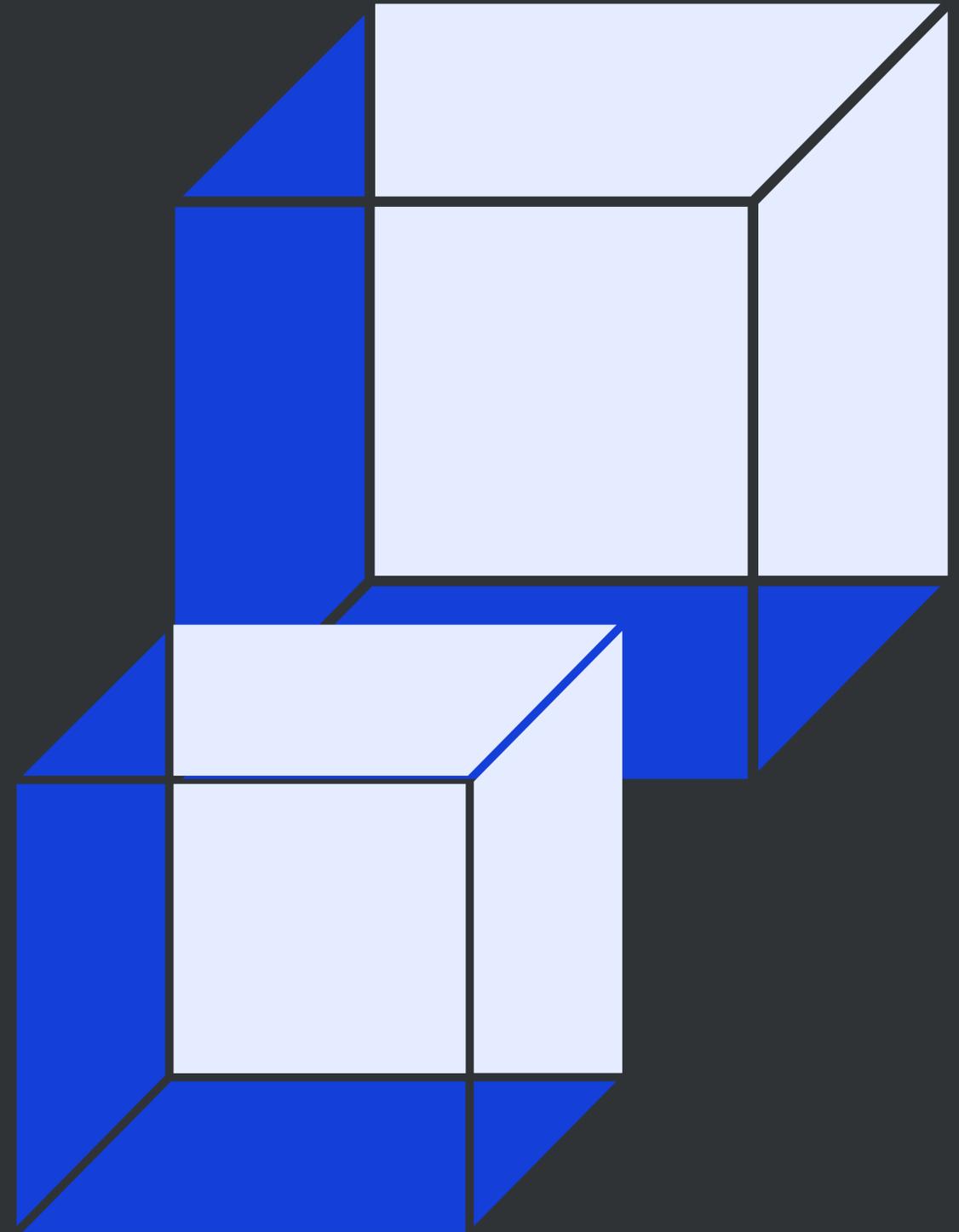
Packaging Compliance Today

Let's be direct: yes, we sell AI-powered packaging compliance software.

But this eBook is more a reality check than a sales pitch.

Whether you are a global VP at a household name or a leader at a brand scaling into its third market, the gold standard of manual review has reached its limit.

Too many high-performing teams are bogged down by last-minute artwork changes that trigger complex review re-loops, force regulatory experts into repetitive checks, or, even worse, lead to missed compliance issues when changes are incorrectly deemed non-relevant.



The Problem with **More**



When things go wrong, the instinct is to add "more." More checkpoints, more reviewers, and more massive spreadsheets. But instead of solving the problem, they just make the process heavier and slower.

Systemic friction: Why errors occur

- **Repetitive burnout:** Human eyes aren't built to perform the same checks across hundreds of artwork versions without glazing over.
- **Time pressure:** Rework and shrinking launch timelines can lead to human errors.
- **Signal drift:** Different reviewers (or different agencies) interpret the same rule in five different ways, leaving your brand consistency to drift off course.

Even in disciplined organizations, it is the painfully ordinary misses, like a forgotten symbol, a faulty barcode, or a tiny wording tweak, that lead to \$10M recalls.

This eBook Is Not About Doing More

We are not suggesting you:

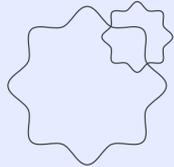
- Add more review steps.
- Create longer checklists.
- Hire more people to stare at artwork.

Most organizations already do this. It helps, but it does not fully close the gap. This eBook is about a different question altogether:

What if artwork QA did not depend on people searching for problems, but on systems surfacing them so you can make a decision?

Inspection
heavy reviews

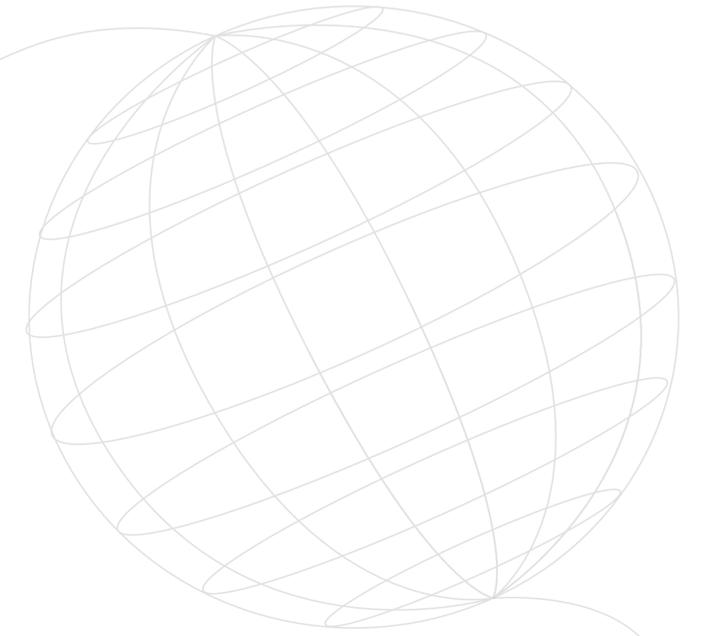




What You'll Learn

In the chapters ahead, we'll cover:

- **The breaking point:** Why manual proofing is now a systemic risk.
- **The shift:** How AI-assisted checks can make you launch faster.
- **The result:** How Esko provides the confidence to move fast.



If you have ever clicked "Approve" while thinking *"I hope we caught everything"* instead of *"I know this is correct,"* you are exactly who we wrote this for.

Chapter 2

The Compliance Trap: Why the Old Playbook is Failing

If it feels like the goalposts are moving, it's because they are. And they're moving at a sprint.

In the good old days, packaging compliance was a gate you passed through. Today, it's a high-stakes obstacle course that never ends.

Here's why.

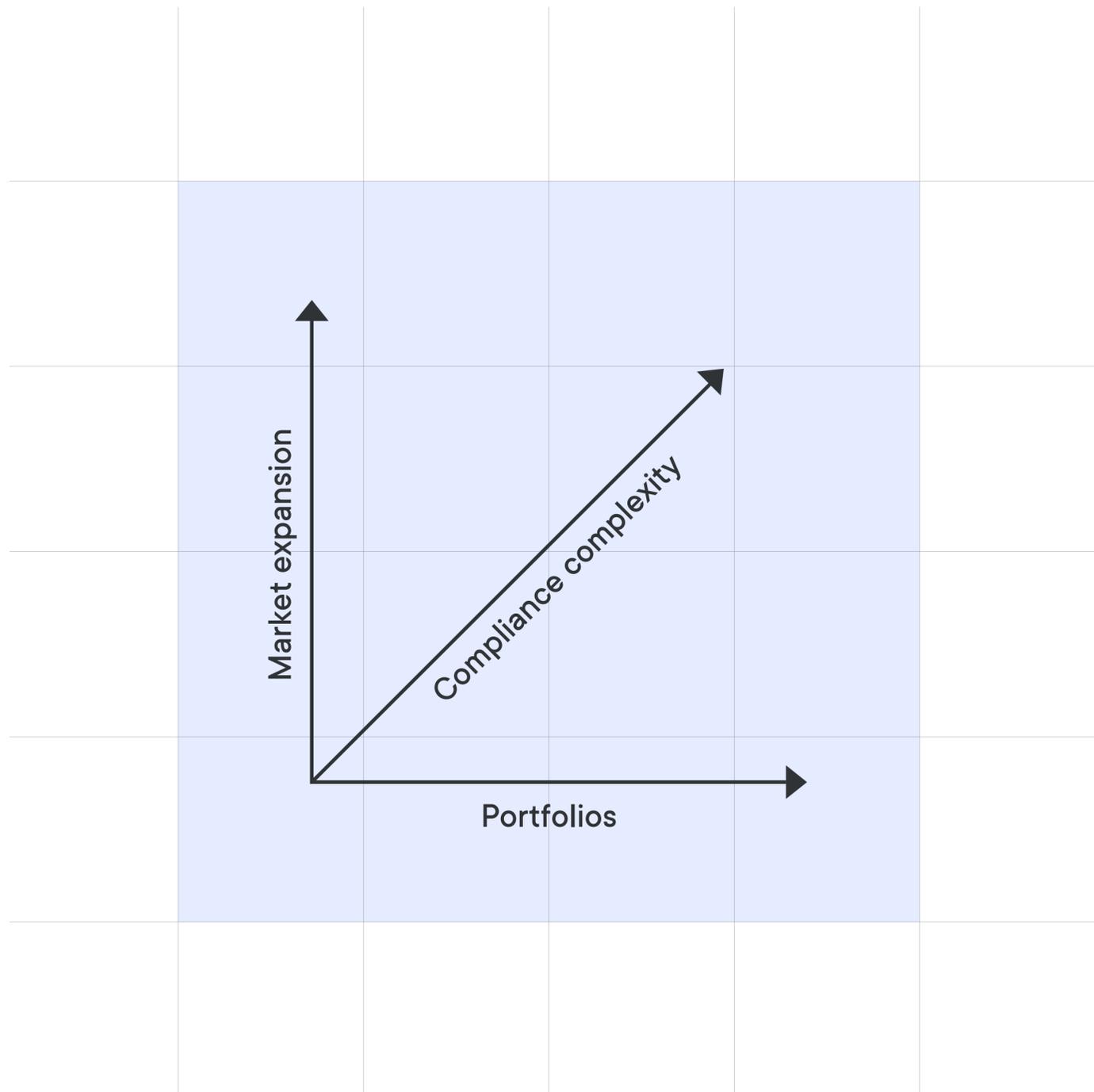


The Era of **Regulatory** Fragmentation

We used to talk about "Global Compliance." Today, that's a myth. What we actually have is a kaleidoscopic landscape of local requirements.

Consumer brands are now drowning in tens of thousands of regulatory updates annually. From the nuances of the UK's post-Brexit divergence to the rapid-fire evolution of California's Prop 65 or the EU's Green Claims Directive, the rules are no longer static.

When you scale that across 50 markets and 2,000 SKUs, manual tracking just sounds mathematically impossible. Even the most seasoned team cannot brute force their way through this much data without something slipping through the cracks.



The **Illusion** of the Final Check

In most organizations, artwork review is the safety net. But as the complexity of the artwork increases, that net is looking more like a sieve.

Manual inspection relies on human pattern recognition, which is brilliant at spotting a crooked logo but notoriously poor at catching a missing allergen in a block of 6pt text after six hours of proofing.

We see the same structural failures time and again:

The fatigue tax:

Reviewers subconsciously prioritize the biggest visual elements, while the "boring" regulatory data—the very things that cause recalls—get the least cognitive energy.

Manual checks catch what's visible.



◆ **The assumption trap:**

- "Marketing said this was already cleared."
- "It's the agency's responsibility to get that part right."
- Manual workflows unfortunately bank on trust. And in compliance, trust-based reviews are a liability.

◆ **Version creep:**

When a change is made at the eleventh hour, the tendency is to "just check the fix." We forget that one small change can have a butterfly effect across the entire layout.

◆ **Interpretation gap:**

Unstructured briefs, changing regulatory language, and the nuance of contextual claims (like allergens vs. warnings) lead to inconsistent decisions.

"Rejected artwork accounts for **50%** of the total workload."

- An Esko customer

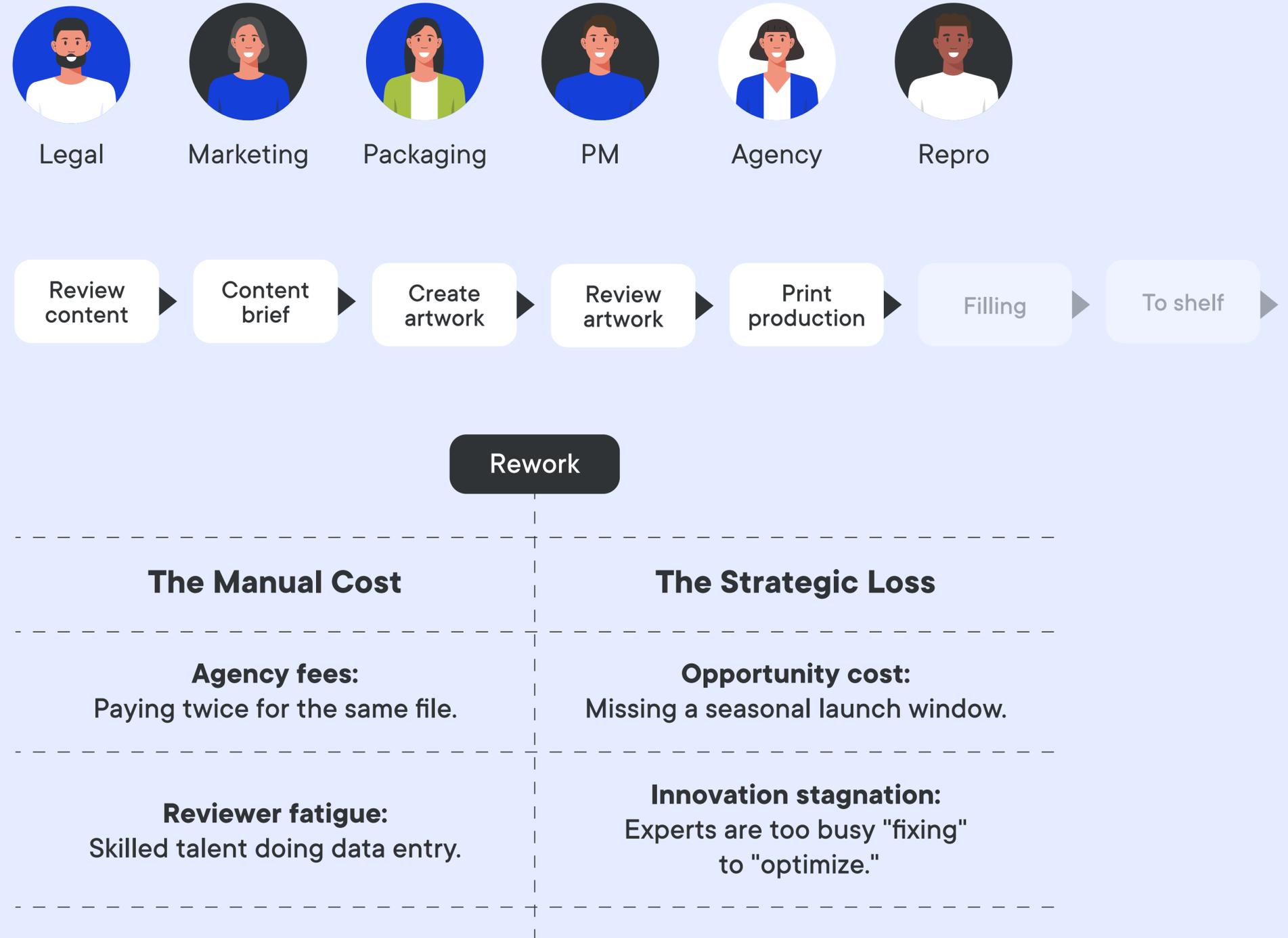
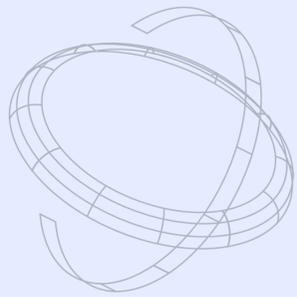
The Hidden Tax of Rework

Rework is more than a scheduling headache. A VP knows it's actually a hidden tax on the P&L.

Every time a file is rejected and sent back to the agency, in addition to losing time, you are also:

- Burning overhead
- Increasing risk
- Increasing team burnout
- Delaying your time-to-market.

In a world where being first to shelf is everything, the compliance bottleneck is often the most expensive part of the product lifecycle.



The **\$100 K** Comma: The Reality of Recalls

Let's be blunt: Nobody gets fired for a late launch, but people do get fired for a national recall.

In 2025, the industry hit a breaking point. The US FDA reported over 400 food recalls by Q3 alone. The terrifying part? Nearly half were driven by labeling errors and undeclared allergens.

When a recall happens, the costs ripple out in three stages:

◆ **The immediate bleed:**

Product destruction, reverse logistics, and retailer chargebacks.

◆ **The operational drag:**

Your best people are pulled off new launches to perform post-mortems and investigations for the next six months.

◆ **The trust deficit:**

Regulators and retailers have long memories. Once you are flagged for a pattern of labeling issues, your reliability score plummets. Future approvals get slower. Last-minute changes get denied. You lose the agility that your brand needs to survive.

Compliance is all about protecting the license to operate. And as we move into 2026, the old manual methods are no longer a viable insurance policy.

Why AI-Assisted QA Is the **Logical Next Step**

If Chapter 2 proved anything, it's that the manual compliance model is no longer struggling. It is mathematically broken.

When SKUs, markets, and regulatory updates all explode in a year, the number of potential failure points exceeds the total cognitive hours available to even the most well-staffed department. You are playing a game of probability where, eventually, the house always wins.

So, why AI?

Because AI is the only tool that scales at the same rate as the complexity. It moves the compliance function from a linear process (one person, one proof, one hour) to a parallel capability.



What **AI-Assisted** QA Changes

The old world of Reg Affairs was built on the hunt. We hired brilliant people and then asked them to spend 80% of their day acting as a human "Find" tool, searching for typos, measuring font x-heights, and cross-referencing ingredient lists.

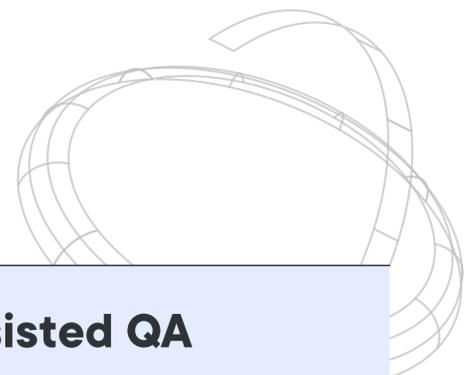
AI-assisted QA flips the script. It is the cognitive exoskeleton that finally separates the task from the talent.

The machine handles the objective:

Is the font 1.2mm? Is the barcode scannable? These are binary, data-driven questions.

The human handles the subjective:

Does this claim overstep our legal boundary?
How do we handle this specific market nuance? By automating the search, we give our experts the time to actually manage the risk.



Manual proofing	AI-assisted QA
Fatigue-prone: Errors increase with the 50th SKU of the day.	Incorruptible: The 500th scan is as precise as the first.
Linear: One pair of eyes, one document at a time.	Parallel: Scalable review across entire product ranges.
Reactive: Issues are caught (maybe) at the final gate.	Proactive: Defined rules catch drift before it becomes a recall.

The Business Case: Beyond "Faster"

*If you tell your CFO that AI makes things "faster," they'll ask for a headcount reduction. If you tell them it **de-risks your company**, they'll give you a budget.*

The true value of AI-assisted QA lies in decision velocity. When your team isn't bogged down in the "Where's Waldo?" of proofreading, approval cycles stabilize.



For a global brand, this means:

Reduced recall exposure:

Catching a missing allergen statement in the digital file is free.
Catching it on a retail shelf costs \$10M.

Talent retention:

High-level regulatory experts want to solve complex compliance puzzles, not check 6pt font legibility for eight hours a day.

Speed to market:

In high-stakes industries, the regulatory department needs to be the slipstream.

You heard it here first.

The future of compliance is about refusing to do work that a machine can do better.

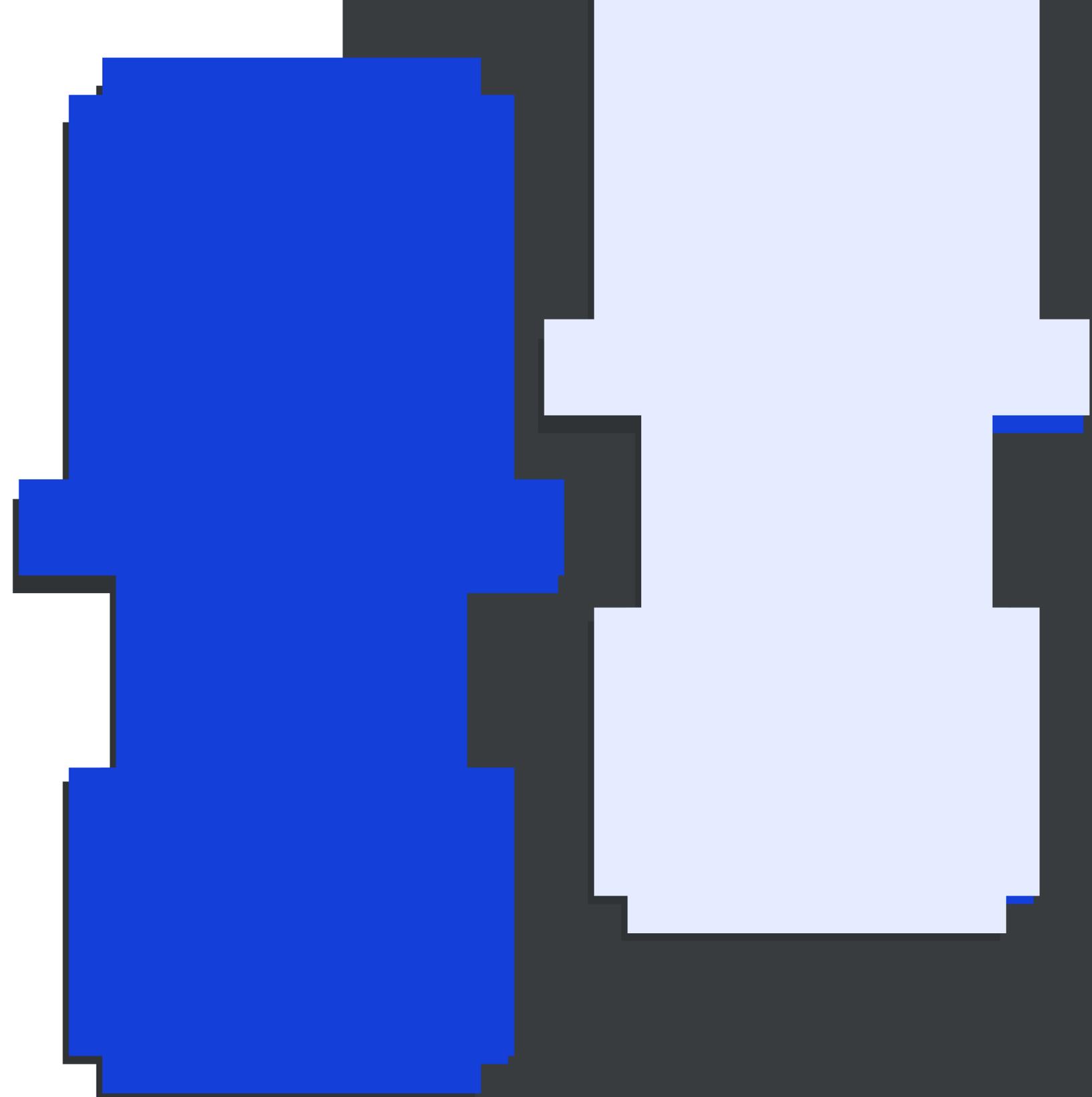
Chapter 4

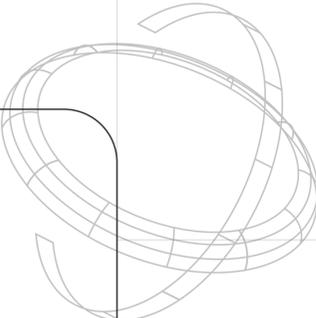
The Architecture of **Certainty**



If the manual model is obsolete, we must define the architecture that replaces it.

For global brands, compliance is a structural component of the digital ecosystem. Moving from a game of probability to a system of certainty requires three specific foundations.





Data liquidity

Spreadsheets, Word docs, PDFs, and other static documents are where compliance dies.

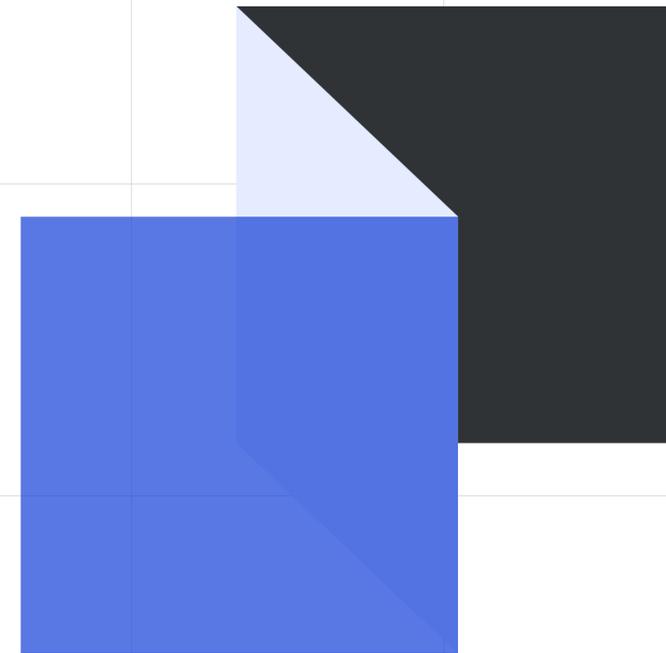
Ingredients, allergens, and claims must exist as structured data. When information is liquid, it flows from the source to the artwork without human intervention. And regulatory teams no longer need to act as data translators.

Policy as code

Your regional requirements (font heights in Brazil, warning symbols in the EU, language stacks in Canada) must be turned into digital rules. When policy is "code," the system enforces the rule automatically.

Verification at the point of creation

The final approval gate is the most expensive place to catch a mistake. The architecture must move verification as far upstream as possible.



By the time a regulatory expert sees a piece of artwork, 90% of the objective data should have already been pre-cleared by the system. This leaves the human to do what they do best: provide the final, nuanced sign-off.

Building this architecture from scratch is a monumental task.

Most companies have the pieces—a PLM system here, a DAM there—but they lack the connective intelligence to make compliance automatic.

They need a system that understands the relationship between the source of truth and the final print.

This is the role of Comply.

How Comply Helps With AI-Assisted Artwork QA

Comply is an AI-led solution from Esko that runs directly inside your existing packaging workflows, so issues are caught early by every team involved without changing how anyone works.



*Runs within your existing workflow,
across teams.*



Design



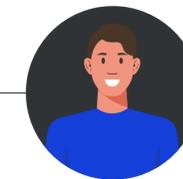
Marketing/Brand



Regulatory



Quality



Print

Intelligence Where the Work Happens



The most effective compliance checks happen at the point of review. Comply embeds these checks into the artwork review process to catch errors before they escalate into costly rework.

Imagine a Friday afternoon where an agency accidentally uses an outdated Nutri-Score symbol or misses a bolded allergen in the tenth language of a regional stack. Normally, this requires a human to spot the needle in the haystack. With Comply, the system does the hunting for you.

The Review Interface: A Map of Risk

When a reviewer opens a file in Comply, they see a prioritized map of risk.



Smart AI checks

The AI scans the file and understands which regional, regulatory, and brand rules apply.



Instant verification

Anomalies are flagged immediately, reducing manual effort.



Visual highlights

Errors appear as clear, annotated markers directly on the artwork.

A reviewer might see a red flag on a font size that is 0.2mm too small for EU law. They might see a warning that an ingredient list does not match the approved master copy. They might see an outdated "Recyclable" logo that was retired six months ago. These are the objective errors that usually slip through when eyes are tired.

How Comply Handles Nuance in **Complex Reviews**

Not all compliance rules apply all the time. Real-world packaging decisions depend on context: product composition, market, claims, and format. Comply is built for how compliance decisions actually work.

IF this is true,

THEN check for this

Text must not contain of

Conditional Rules (If-Then Logic)

Comply supports conditional logic that mirrors how regulatory and QA teams think in practice.

For example:

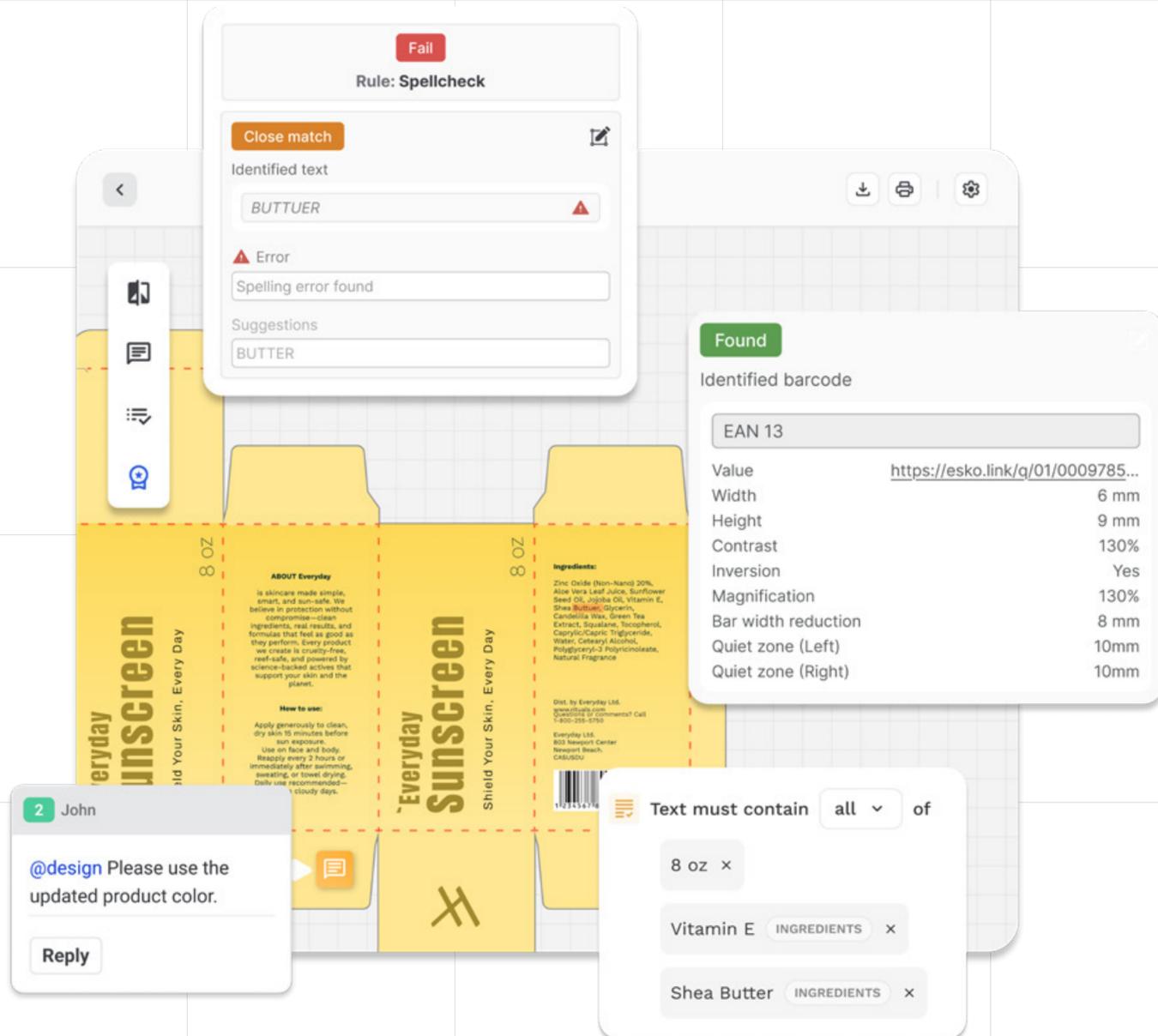
- If a product contains a specific allergen, then a mandatory warning must appear.
- If a product is sold in a particular country, then a market-specific disclaimer is required.

Linked Rulebooks Across Brands and Markets

Packaging rarely follows a single rule set. Most teams work with overlapping layers:

- Global brand standards
- Regional or country regulations
- Product- or category-specific requirements

Linked rulebooks allow these layers to run together. It lets you connect one rulebook to another. Comply applies all relevant rules in a single review pass, without duplication or manual cross-checking. This is especially valuable when managing large portfolios or multi-market rollouts.



Text Compare for Variable, Market-Specific Content

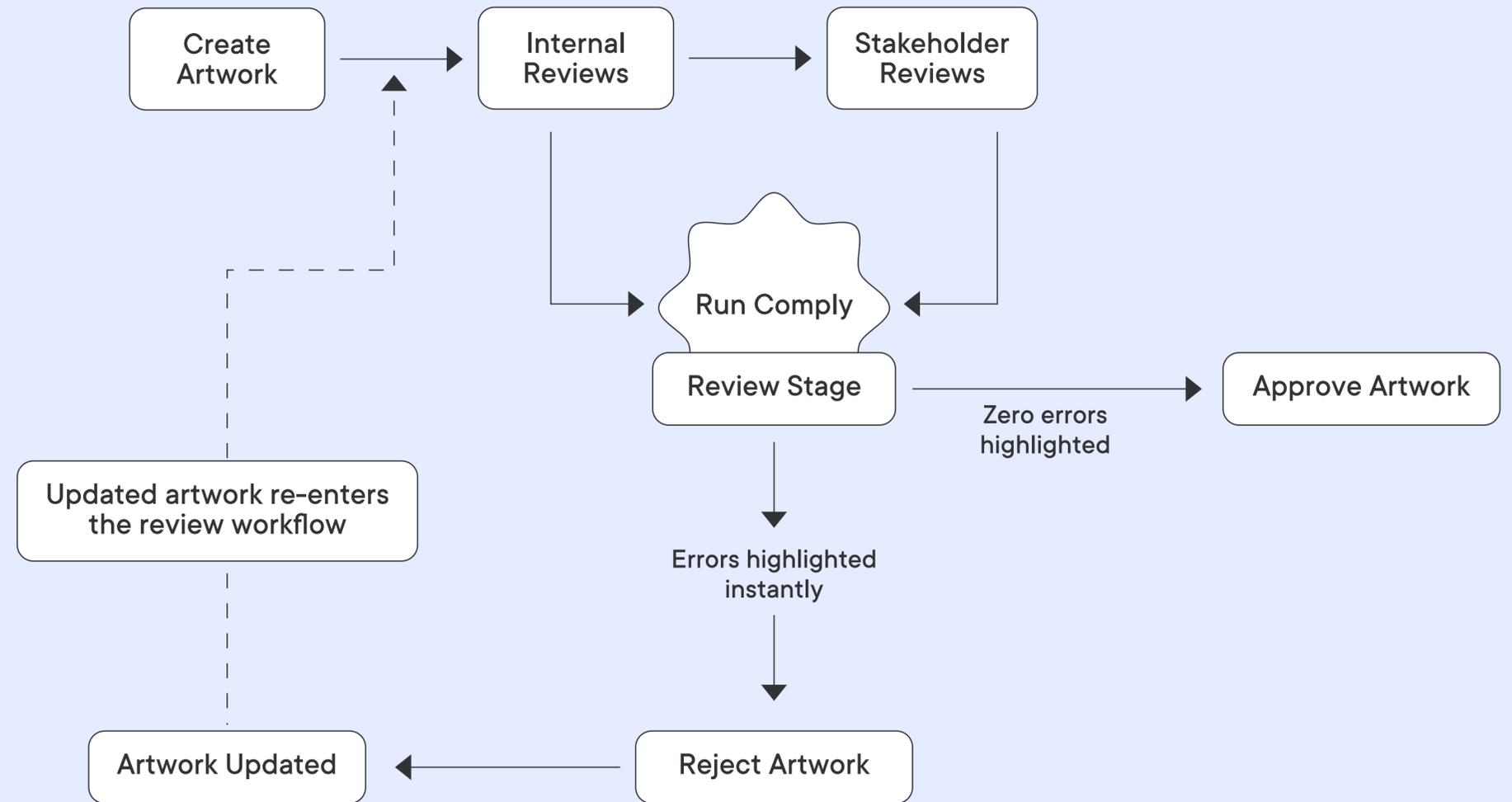
Comply validates artwork text against the correct source content, even when that content varies by SKU, language, or market.

Instead of manually checking addresses, declarations, or legal copy, reviewers can rely on automated text comparison using variables tied to metadata or approved content sheets. This ensures the right content appears on the right artwork, every time.

This capability is especially critical when a single artwork template is reused across dozens of SKUs or complex regional clusters.

Control Stays with the Expert

Technology should never make the final regulatory call. Comply provides the data and the pass/fail signals, but your team remain the final decision makers.

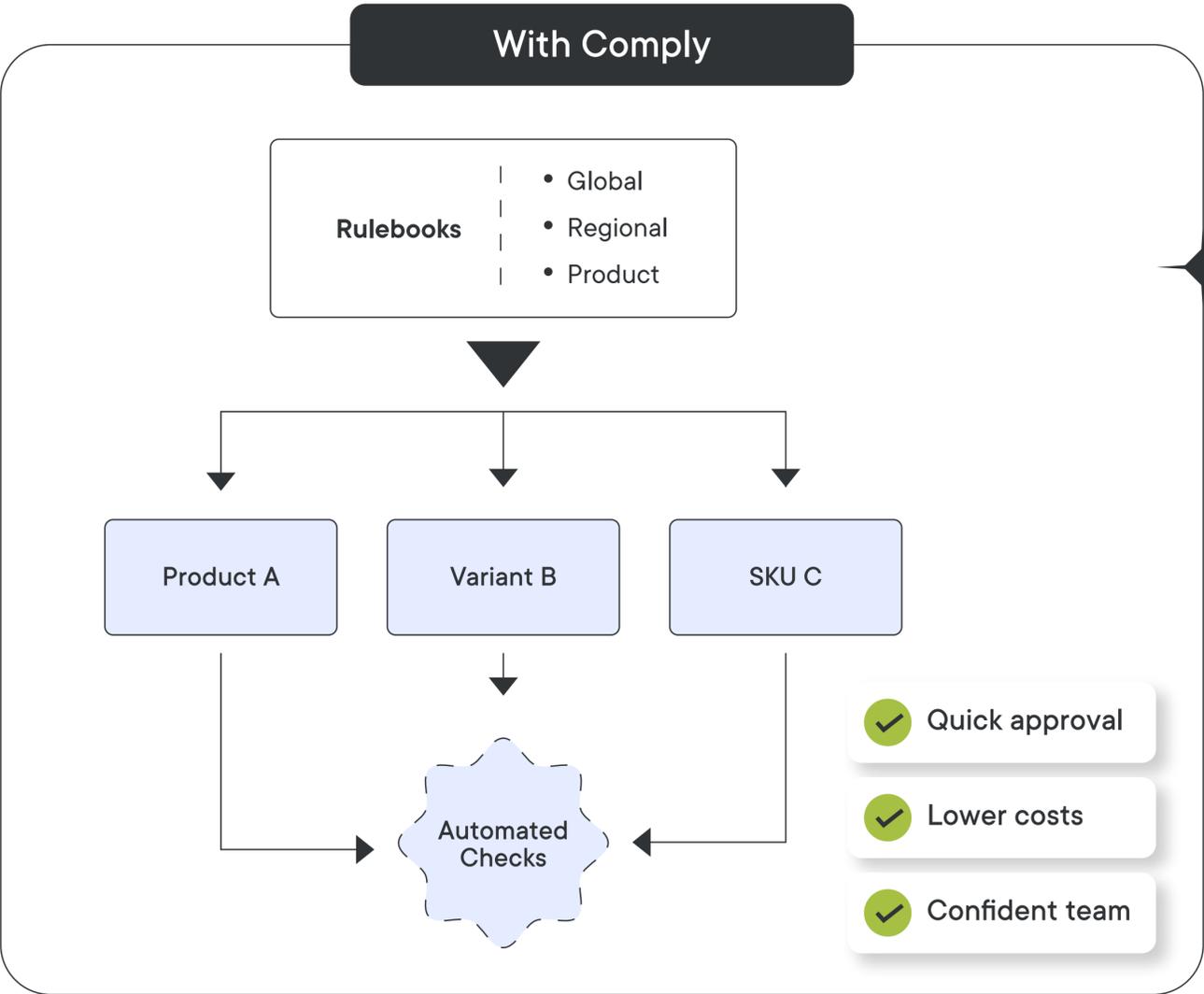
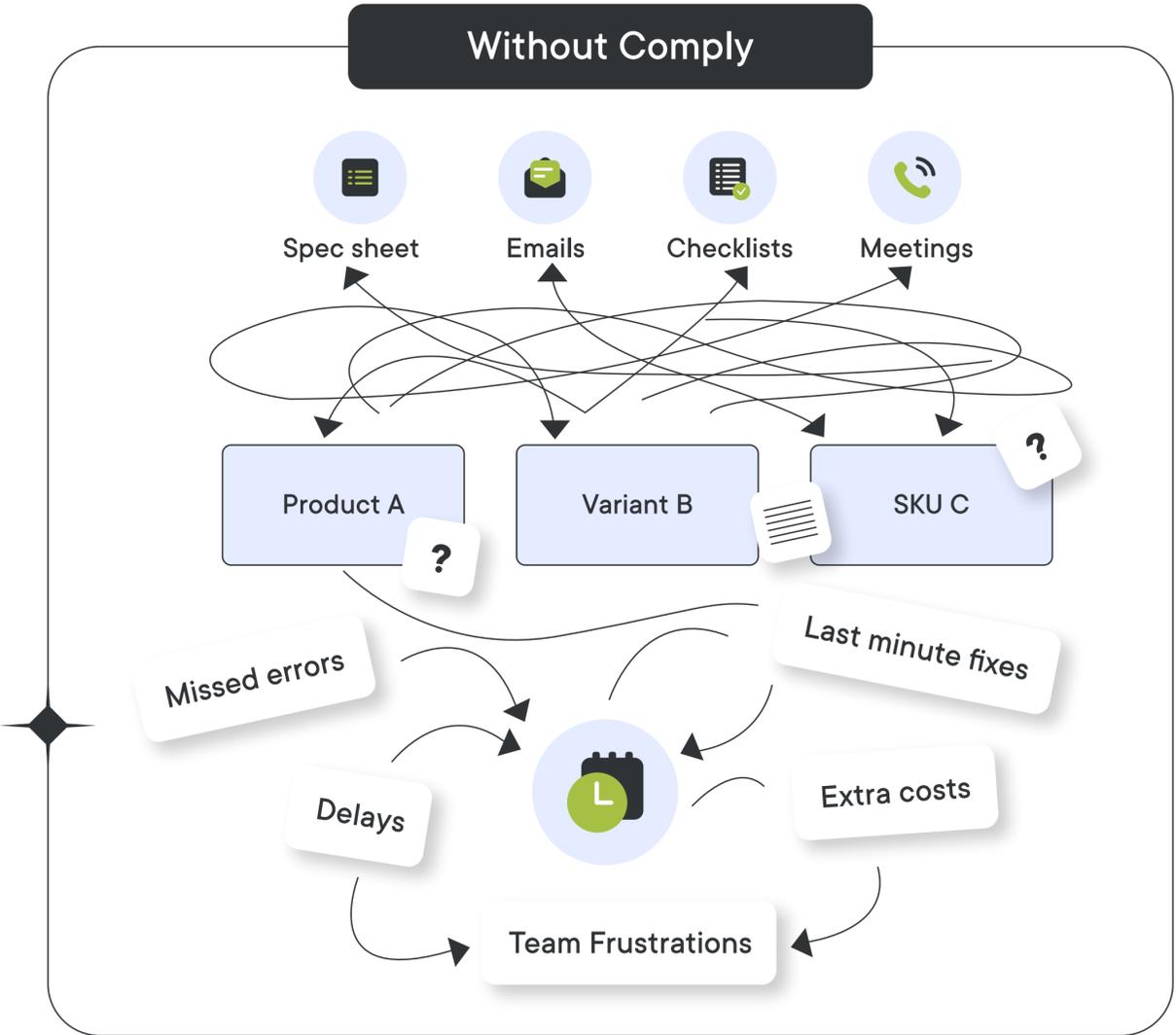


The system provides visual highlights of risk areas and a documented audit trail. If a claim is flagged, the expert can approve it with a comment or reject it for correction. This creates a high-fidelity record of every decision.

This audit trail is your best friend when an internal auditor or a national regulator asks for a post-mortem of a project.

The New Standard of Confidence

Ensure consistency across every SKU in your portfolio with AI-assisted checks from your label briefs and specifications. Comply automatically checks packaging against market- specific regulations, brand rules, and claim criteria at a speed that manual processes cannot match.



The result is a workflow where the heavy lifting of proofreading and regulatory verification is automated. Your experts are free to focus on the nuanced strategy of global compliance.



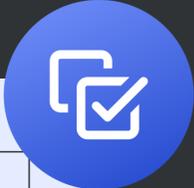
Chapter 6

From Text to Barcodes:

The Things Comply Catches (So You Don't Have To)

Comply covers a wide range of regulatory requirements, with built-in regulatory intelligence that automatically checks artwork against current market regulations (e.g., FDA, EU Annex II).

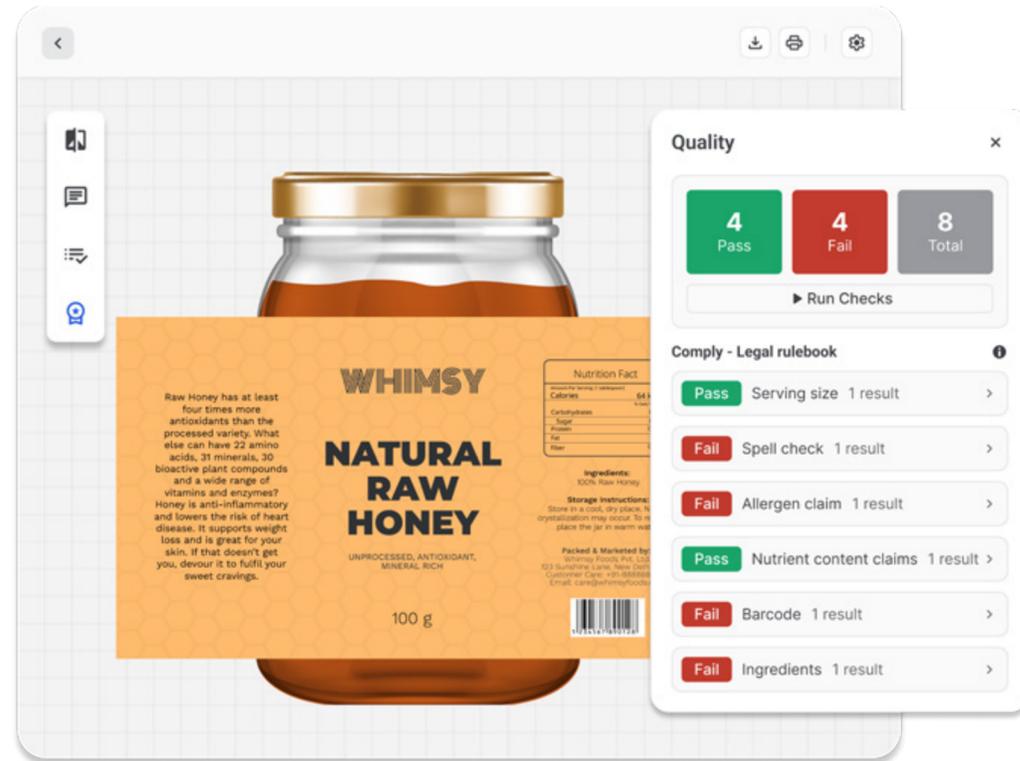
Review Areas	What It Checks
Text	Presence, omission, correctness of copy elements
Text Formatting	Fonts, sizes, styles (bold, italic)
Spelling	Correct spelling of all copy elements
Logos & Symbols	Mandatory logos and symbols, correct sizing
Barcode	Type (EAN-13, UPC-A, QR etc.), technical specs, encoded data
Table	Nutrition Facts and other structured tables



Text & Spelling

Comply reviews all on-pack text to make sure required information is present, correctly worded, and spelled accurately.

This includes ingredient names, claims, warnings, disclaimers, and mandatory statements.



Especially critical for allergen labeling and mandatory declarations.

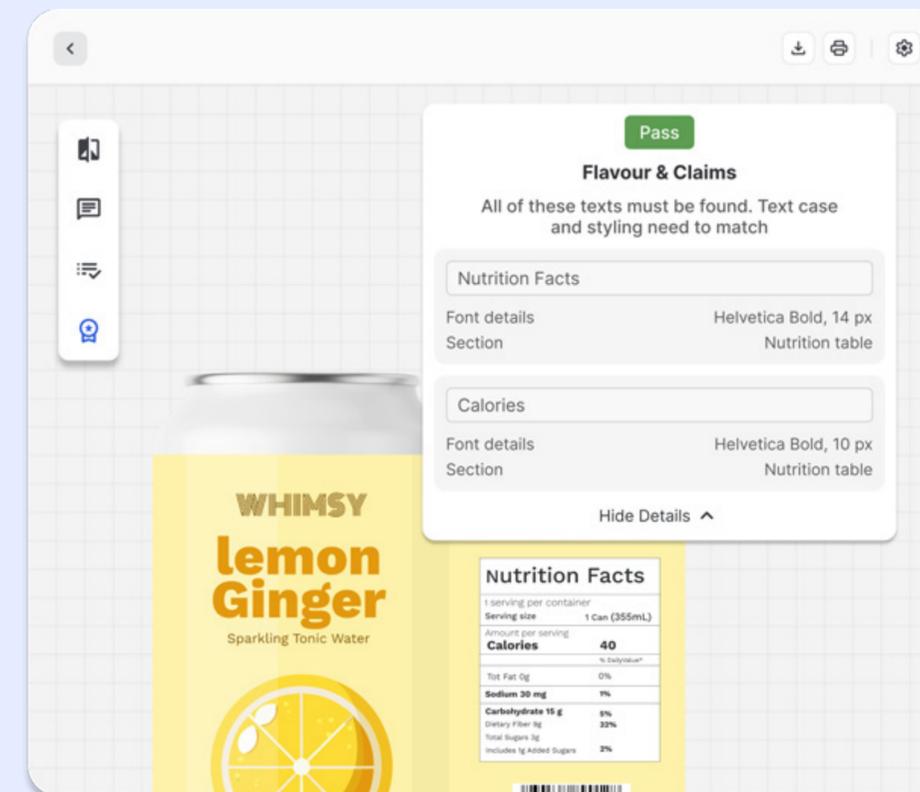
Strategic impact: This is critical for allergen labeling where a single typo can trigger a Class I recall.

Formatting

It verifies things like:

- Font type and point size.
- Placement of mandatory regulatory blocks.

Helps prevent brand and regulatory formatting violations across markets.



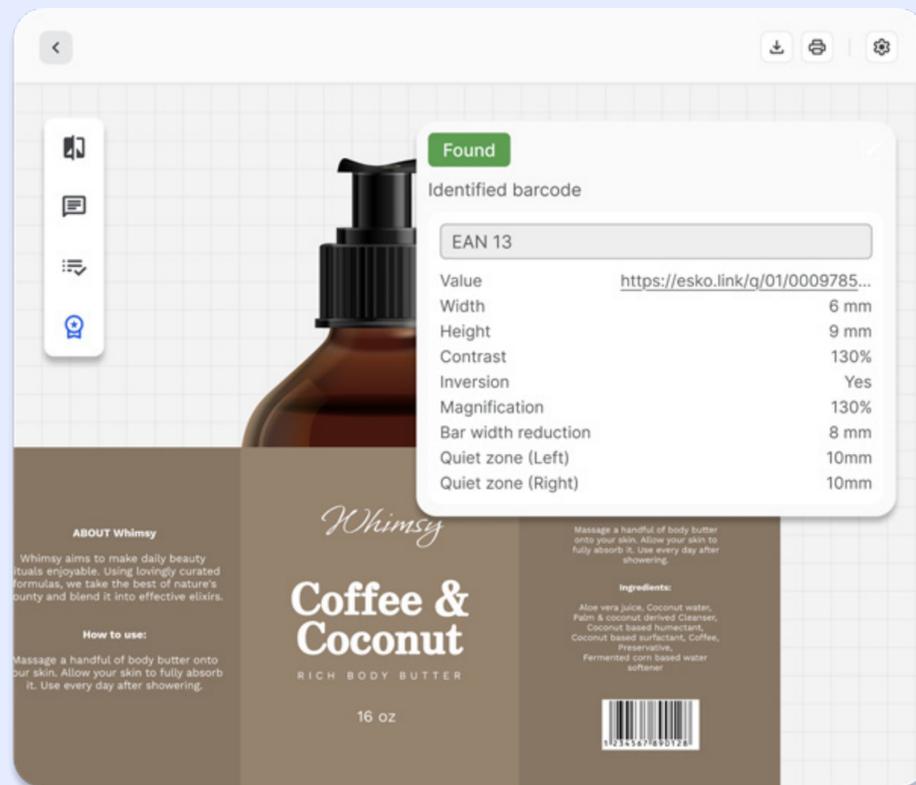
Strategic impact: This prevents formatting violations that often lead to stop-sale orders or shelf withdrawals, especially for critical elements like allergen declarations in Europe and North America.

Barcodes and QR Codes (1D & 2D)

Comply verifies that barcodes are present, readable, and correctly formatted.

Whether it's a traditional 1D barcode or a 2D code like QR or DataMatrix, Comply checks that they meet your defined requirements.

Especially critical for accurate retail scanning and preventing distribution errors.

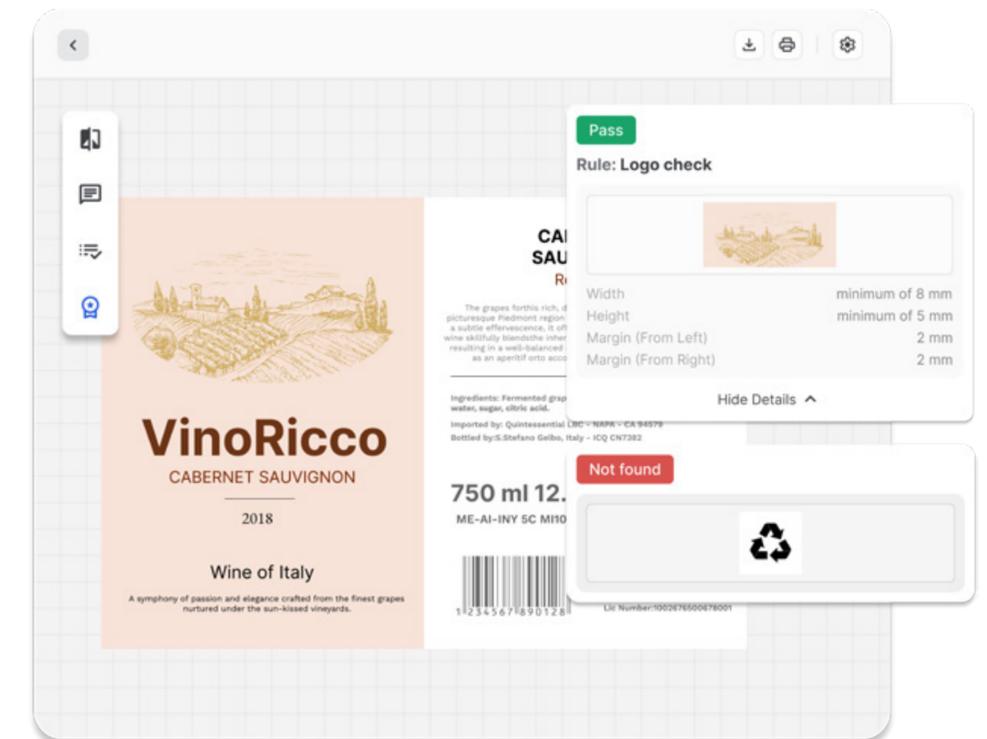


Logos & Symbols

Comply checks whether:

- The correct brand marks are used
- Approved certification or regulatory symbols are present
- Outdated or incorrect symbols appear anywhere on the artwork

This helps maintain brand consistency while avoiding misuse of regulated marks.



Strategic impact: This protects brand equity and prevents the misuse of regulated marks, such as Fairtrade or Organic certifications, which carry heavy legal penalties for non-compliance.

Tables

Comply ensures nutrition fact tables are accurate and properly formatted.

It highlights discrepancies so teams don't have to manually cross-check numbers cell by cell.

Strategic impact:

This removes the most common source of manual proofreading fatigue. It ensures that the high-risk data that consumers rely on for health and safety is verified with mathematical precision.

The screenshot shows a nutrition label for a beverage. The label includes the following information:

- Ingredients:** Carbonated Water, Lemon Juice, Ginger Juice, Cane Sugar Syrup.
- Nutrition Facts:**
 - 1 serving per container
 - Serving size 1 Can (355mL)
 - Amount per serving
 - Calories 40** (% Daily Value*)
 - Tot Fat 0g 0%
 - Sodium 30 mg 1%
 - Carbohydrate 15 g 5%
 - Dietary Fiber 9g 32%
 - Total Sugars 3g
 - Includes 1g Added Sugars 2%

Two error messages are displayed on the right side of the screen:

- Fail:** Rule: Table check. Table must be FDA Tabular format with specified content details. Hide Details ^
- Error:** Identified row: Tot fat. Font details: Bold, 5 px. 0g. Font details: Regular, 10 px. 0%. Font details: Regular, 10 px. Errors: Text must be "Total fat". FDA error: Font weight must be bold.
- Found:** Identified row: Amount per serving. Font details: Bold, 5 px.

Chapter 7

Selecting the Right Compliance Architecture

Implementation is not a one-size-fits-all process. Comply works as a module inside the Esko Packaging Management ecosystem, and the setup depends on whether you need agility in an emerging business unit or a centralized infrastructure for a global enterprise.

For Growing Brands: Agility First

When your portfolio is expanding and your team is lean, compliance can't slow you down. You need something that fits into your existing workflows, sets up fast, and starts catching errors without adding layers of complexity.

Choose:



Comply

+



WebCenter Go

Why it works

- Plug-and-play setup.
- Flags high-risk issues early.
- Keeps pace with agile launches.

Perfect for

- Brands scaling into new SKUs and markets.
- Teams without dedicated compliance specialists.
- Businesses that value speed and flexibility.

For Enterprise Brands: Compliance as Infrastructure

When you're managing hundreds of labels across multiple regions, consistency is hyper-critical.

Manual checks can't keep up with the complexity of global portfolios. You need compliance that's embedded into your system, not bolted on.

Choose:

 **Comply** +

 **WebCenter Enterprise**

Why it works

- Deep configuration for complex rules.
- Customized checks across brands and geographies.
- Automated audit trails for internal and external reviews.

Perfect for

- Organizations with distributed teams and multiple agencies.
- High-volume artwork changes.
- Businesses that need defensible compliance at scale.



The Economics of Certainty

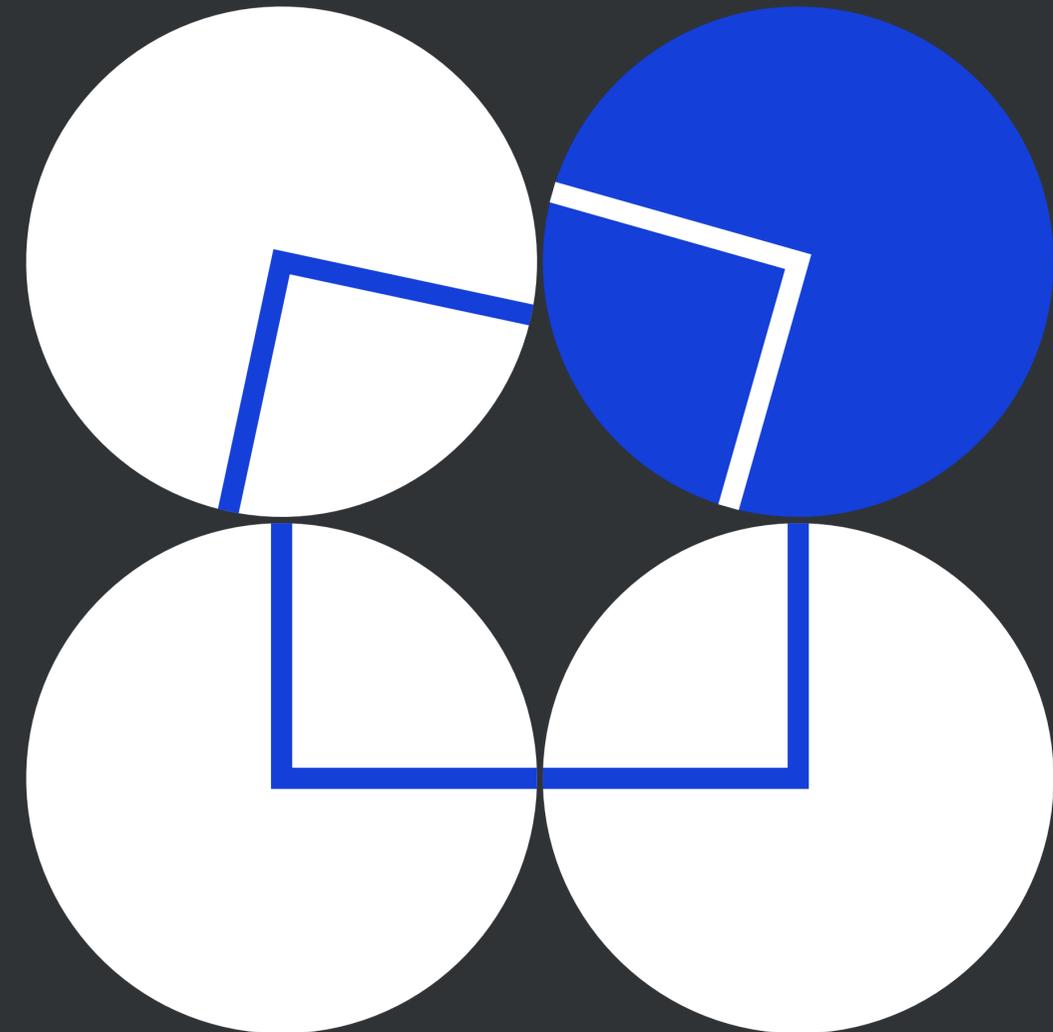
In many organizations, manual compliance is viewed as a sunk cost — a line item for headcount that feels free compared to a new software investment.

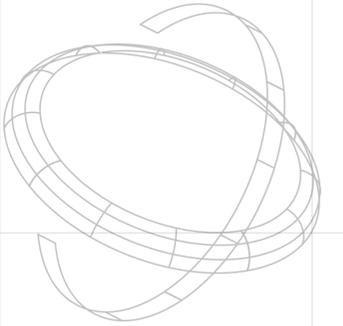
In reality, manual review is one of the most expensive hidden taxes on a packaging P&L.

The hard math of label failures.

About **77%** of companies that faced a recall in the past five years estimated the financial impact at up to **\$30 million**, with many reporting even higher costs.

However, the ROI of AI-assisted compliance does not only live in the avoidance of a "black swan" recall. It lives in the elimination of daily economic leakage.





A Simple Way to **Think About ROI** (No Calculator Required)

You don't need a formal ROI calculator to understand the cost of manual compliance. You just need to follow where time, rework, and risk quietly add up.

Think of it this way:

**Cost of Manual Compliance =
(Time × People × Versions Reviewed) + Late-Stage Fixes +
Risk Carried to Print × Number of SKUs**

Let's break that down.

Time × People × Versions Reviewed

Every label passes through multiple reviewers: regulatory, QA, brand, legal, and sometimes external agencies. Often more than once.

Most packaging projects involve:

- 4–6 reviewers
- 3–8 artwork versions before approval
- 30–60 minutes per reviewer per version

Even conservatively:

5 reviewers × 4 versions × 45 minutes
= 15 human hours per SKU

This doesn't include follow-ups, meetings, or clarifications, just review time.

Multiply that across a 2,000–10,000+ SKU portfolio, and review time alone becomes a meaningful operational cost.

Late-Stage Fixes

Late fixes are where costs escalate quickly.

They typically happen when:

- Market-specific rules change
- Claims need substantiation
- Barcode or technical specs fail validation
- Regulatory feedback arrives late

A simple way to think about it:

Late Fix Impact = (% of total SKUs with late changes)
× (Time to resolve each)

To estimate your number, ask:

- How often do files reopen after final approval?
- How often does pre-press or a printer flag issues?
- How often do claims or regulatory text change late?

For instance, if a team manages:

- 250 SKUs per year
- 15% require late fixes
- 6 hours per fix

That equals 225 hours/year spent on late fixes.

Risk Carried to Print

This is the cost of errors that survive review and make it onto physical packaging.

Industry-wide, labeling errors remain one of the most common causes of:

- Reprints
- Post-launch corrections
- Market withdrawals
- Recalls

Even a 2–3% error rate at print can translate into six figure annual costs across large SKU portfolios.



Paying for Fewer

“What Ifs”

Manual compliance feels inexpensive because the cost is spread out.

But when you look at:

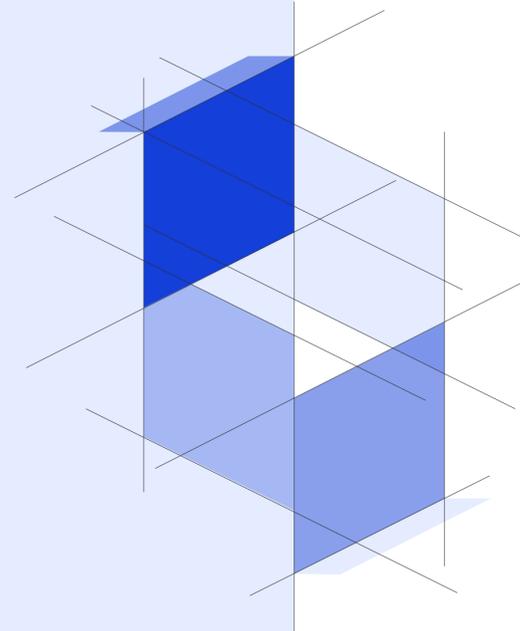
- How many versions are reviewed
- How often approvals restart
- How frequently fixes happen late

The tradeoff becomes clear.

Many brands spend 8–12 weeks on artwork reviews and regulatory approvals. Much of this time goes into repeated manual checks and version rework.

Comply runs automated checks for claims, allergens, and barcodes early in the process.

This helps reduce review loops and late-stage corrections. As a result, timelines that once took 3 months can move closer to 1 month, supporting up to **67% faster go-to-market**.



Cost with Automated Compliance
= (Reduced Review Time × Fewer Versions) + Early Fixes + Risk Removed Before Print

Instead of relying on repeated human review, teams define rules once and let them run every time.

That changes three things immediately:

- **Time spent per artwork drops** because common checks don't need to be re-verified manually.
- **Fixes happen earlier**, when they're faster and cheaper to resolve.
- **Risk moves left**, out of print stages and into controlled review environments.

Where the ROI actually shows up

- One fewer reprint per quarter
- One launch that doesn't slip
- One error caught before it reaches print
- Fewer people pulled into emergency reviews

Chapter 9



Beyond the Final Check

We've spent this eBook looking at why the old way of checking packaging is hitting a wall.

The math is simple: there are too many rules, too many SKUs, and not enough hours in the day for even the best teams to keep up manually.

The good news? You don't have to.

The **New Reality** of the Job

AI isn't here to take over the regulatory department. It's here to take over the grunt work. When you move to AI-assisted checks, the daily grind changes:

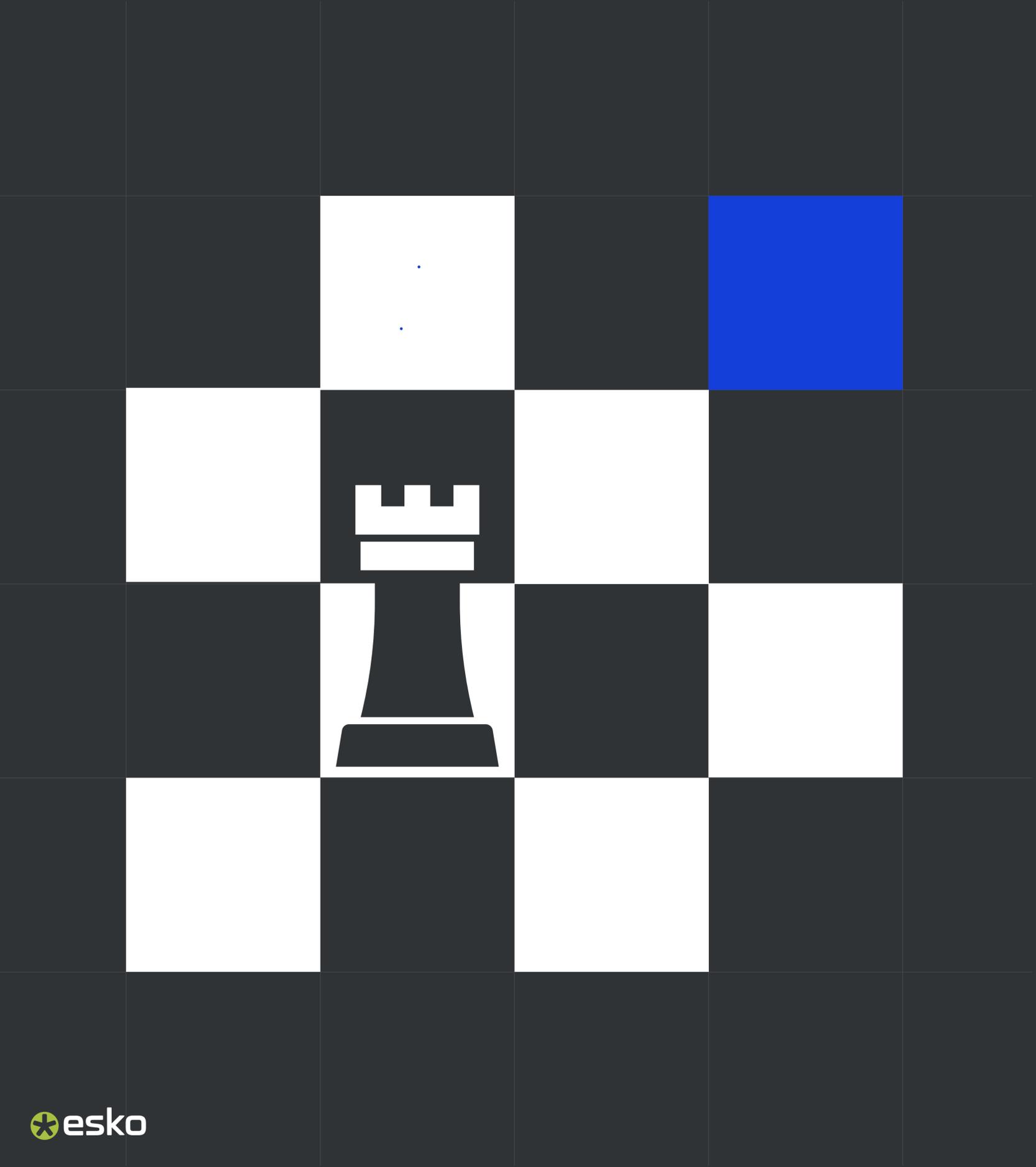
- **From hunting to deciding:** Stop searching for missing commas. Let the system flag the errors so you can spend your energy on the big-picture strategy.
- **From hope to certainty:** Rules are applied the same way every time, whether it's 9 AM on Monday or 4 PM on a Friday.
- **From stress to scale:** Grow your portfolio into 50 new markets without needing to triple your headcount.

Why Comply?



We built Comply to be the silent partner in your workflow. It sits exactly where the work happens, catching the "oops" moments before they become roadblocks, or worse: recalls.

- **Agile for growth:** Fits right into your current setup.
- **Built for Enterprise:** Scales across global teams and agencies.
- **Audit-ready:** Every check is documented, so you're always prepared for the "how did this happen?" questions.



Your Next Move

The shift is inevitable. You can continue to rely on human endurance, or you can start engineering accuracy into your process.

*The next step is easy: Let AI catch the errors.
You decide what goes forward.*

Move forward knowing the artwork is right before it ever hits the press.

Your team (and your eyesight) will thank you.

Talk to us about Comply today

