OBEYA CONSULTING

Unlocking Business Potential with Intelligent Robot Process Automation (I-RPA)

A Practical Guide to Implement AI-Powered Process Automation Tools for Lasting Business Impact

Executive Summary

Across industries, enterprises are moving beyond traditional Robotic Process Automation (RPA) towards a new era: **Intelligent Robotic Process Automation (I-RPA)**. This evolution fuses the precision of automation with the adaptive capabilities of Artificial Intelligence (AI) - enabling not just faster execution of repetitive tasks, but smarter, context-aware decision-making at scale.

I-RPA can capture, interpret, and act upon data from multiple sources, adapting to variations in process flows and learning from each transaction. When deployed strategically, it transforms rigid workflows into dynamic, self-improving systems that continuously enhance efficiency and accuracy.

Yet, the significant factor for success lies not in the technology itself, but in how it is applied. Successful organizations follow a deliberate roadmap:

- **Clarify the strategic intent**
  Define which outcomes the automation must achieve and how these align with broader business priorities.
- **Target high-value opportunities**
  Identify processes with measurable impact potential, whether in cost reduction, service quality, or regulatory compliance.
- **Establish robust governance**
  Ensure roles, responsibilities, and escalation paths are in place to safeguard compliance and security.
- **Select the right platform**
  Choose technology that can operate securely in heterogeneous IT landscapes and integrate across the enterprise without compromising data privacy.
- **Prove value through pilots**
  Deliver tangible quick wins, then scale incrementally to reduce risks and secure stakeholder buy-in.

I-RPA is not just a cost-saving initiative, it i**s a catalyst for business transformation**. By freeing employees from routine work, it unlocks capacity for higher-value, creative, and analytical tasks. By embedding AI into process execution, it enhances decision-making precision and operational resilience.

This document provides a strategic lens on the possibilities of I-RPA, highlighting the key considerations and early steps required to turn potential into performance. The detail of "how" to achieve this is unique to each organization - and it is in that journey where the real competitive advantage is gained.

Abbreviation Glossary

AI – Artificial Intelligence
The capability of machines to perform tasks that typically require human intelligence, such as learning, reasoning, or natural language processing.

API – Application Programming Interface
A set of protocols and tools that enables different software applications to communicate and interact – essential for integrating systems.

BCG – Boston Consulting Group
A global management consulting firm, referenced here from the "AI at Scale 2024 – Global AI Adoption Report."

DMZ – Demilitarized Zone
A network segment that acts as a buffer between the public internet and the internal network to enhance security.

GDPR – General Data Protection Regulation
The EU regulation governing the processing of personal data within the European Union.

HIPAA – Health Insurance Portability and Accountability Act
A US. law establishing privacy and security requirements for healthcare data.

IAM – Identity and Access Management
Processes and tools for managing user identities and controlling access to systems and data.

I-RPA – Intelligent Robotic Process Automation
An evolution of traditional RPA by integrating AI and machine learning capabilities to automate more complex, context-aware processes.

KPI – Key Performance Indicator
A measurable value used to evaluate the success of an activity or process.

ML – Machine Learning
A subfield of AI where algorithms learn from data and improve their performance over time.

RBAC – Role-Based Access Control
An access control model where permissions are assigned based on a user's role within the organization.

RPA – Robotic Process Automation
Technology for automating rule-based, repetitive tasks using software robots.

ROI – Return on Investment

The ratio of profit or savings to the investment made, often expressed as a percentage.

SLAs – Service Level Agreements

Contractual agreements between a service provider and a client defining the scope of service, quality standards, and response times.

SOX – Sarbanes–Oxley Act

A US law setting requirements for financial reporting and internal controls in public companies.

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1. Introduction

The business landscape is undergoing a profound shift. Competitive advantage is no longer determined solely by the quality of products or services - it is increasingly shaped by an organization's ability to **execute with speed, precision, and adaptability**. In this environment, traditional process optimization methods are reaching their limits.

Intelligent Robotic Process Automation (I-RPA) is emerging as a key enabler of the next wave of operational excellence. By combining the structured **efficiency of classic RPA with the cognitive capabilities of Artificial Intelligence**, organizations can move beyond simple task automation to intelligent, self-adjusting workflows. These systems can interpret context, handle variations, and make informed decisions in real time.

However, the adoption of **I-RPA** is not only a technological upgrade. It represents a **strategic capability** - one that must be aligned with governance, security, and long-term business objectives. Implemented without a clear vision, automation risks becoming a fragmented set of separated tools that add complexity and maintenance efforts rather than reducing it.

> ***"77% of organizations see process automation as a critical driver for achieving digital transformation goals."***
> *(Deloitte Global RPA Survey 2023)*

What to Expect in This Whitepaper

This whitepaper offers a strategic perspective on I-RPA for business leaders and decision-makers. You will get information on:

- **A clear understanding of the business case** for I-RPA and its strategic role in modern enterprises.
- **Insights into common challenges** faced by organizations that rely solely on traditional process management.
- **Guidance on identifying high-impact automation opportunities** without overexposing sensitive data or creating technology silos.

- **A readiness framework** to assess whether your organization is prepared to adopt I-RPA at scale.
- **Practical considerations for governance, security, and integration** in heterogeneous IT environments.

The following pages are not a technical manual, but a roadmap for strategic decision-making. They are designed to inspire curiosity, spark ideas, and provide the high-level clarity needed to take the next step in your organization's automation journey.

2. Common Business Challenges

In many companies, leaders often ask the same question: *"Why, despite all our investments in digital tools, do we still feel slowed down?"* The answer is rarely about a lack of technology - it is about **how work is actually carried out and technology is embedded within the company**.

Across industries, many organizations still rely on **manual, repetitive, and disconnected processes** that have quietly persisted for years. What once felt manageable has become an anchor in a world where **speed, precision, and adaptability define competitiveness**. In this environment, every unnecessary handoff, every repeated keystroke, and every delayed approval carries a cost - not just in money, but in missed opportunities, frustrated employees, and dissatisfied customers.

The consequences are far-reaching:

2.1 Inefficient Use of Human Capital

Highly qualified professionals often spend **40–60% of their time on administrative work** - filling forms, copying data between systems, or chasing approvals - instead of focusing on strategic initiatives.

2.2 High Error Rates and Rework

In processes that depend on manual input, **human error is inevitable**. A misplaced decimal point, an overlooked attachment, or a misrouted request can set off a chain reaction of delays and corrections. Each error requires time-consuming rework, pushing projects off schedule and consuming resources that could be used elsewhere.

2.3 Scalability Limitations

Manual workflows do not scale well. When demand spikes - whether during seasonal peaks, a product launch, or an unexpected market shift - companies must either stretch their teams beyond capacity or resort to costly short-term staffing.

2.4 Disconnected Systems & Data Silos

Most enterprises operate a **patchwork of applications** - some on-premise, others in the cloud, many department-specific - that do not integrate seamlessly.
Employees act as human middleware, transferring information between systems and trying to reconcile inconsistencies.

2.5 Compliance and Regulatory Pressure

Regulatory frameworks such as GDPR, HIPAA, SOX and similar demand consistent, traceable, and timely handling of data. Manual processes make it difficult to prove compliance, leaving organizations vulnerable to fines, reputational harm, and legal disputes.

3. What is I-RPA?

If traditional automation is like a well-trained assembly line - fast, consistent, but limited to do exactly what it was told - **Intelligent Robotic Process Automation (I-RPA)** is more like **a capable digital colleague** who can adapt, learn, and collaborate.

At its core, I-RPA combines classic RPA's rule-based process automation with the advanced capabilities of Artificial Intelligence (AI) and Machine Learning (ML). This means it can go beyond simple, repetitive tasks and handle complex, variable, and judgment-based workflows.

Whereas standard RPA might automatically transfer data from one system to another, **I-RPA can**:

- **Understand and classify documents** using natural language processing.
- **Recognize patterns** in large datasets to make informed recommendations.
- **Transfer data** automatically to other systems.

- **Interact with humans naturally**, escalating only the cases that require human oversight.
- **Continuously improve** by learning from past outcomes and adapting workflows accordingly.

> ***"Companies that integrate AI into their RPA deployments report up to 50% faster cycle times compared to RPA alone."***
> *(Forrester, Intelligent Automation Trends 2024)*

3.1 The Main-Pillars of I-RPA

1. **Automation of Repetitive Tasks** – The foundation: eliminating manual, time-consuming processes such as data entry, form completion, and system updates.
2. **Cognitive Capabilities** – The differentiator: enabling bots to interpret unstructured data, understand context, and make rule-based decisions with a degree of flexibility.
3. **Integration Across the Enterprise** – The enabler: connecting heterogeneous systems, applications, and data sources into a seamless operational flow.

3.2 From Cost Reduction to Strategic Enablement

Historically, automation initiatives were primarily justified by cost savings. While that remains an important outcome, I-RPA shifts the narrative toward strategic enablement:

- Empowering employees to **focus on high-value**, creative, or customer-facing work.
- Increasing **speed-to-market** for new services and products.
- Enhancing **customer experience** through faster response times and greater accuracy.

4. The Business Case & KPI's

In a competitive budget-restricted environment, every initiative must prove both, tangible returns and strategic relevance. I-RPA is uniquely positioned to deliver on both fronts - but only when its business case is clearly defined and aligned with corporate priorities.

While many leaders still view automation primarily as a means to reduce costs, I-RPA extends far beyond labor savings. By integrating advanced capabilities such as AI and machine learning, it not only reduces manual workloads, minimizes human error, and increases process throughput, but also enables broader business transformation.

The most compelling I-RPA cases demonstrate what automation can:

- **Accelerate strategic initiatives** by enabling faster, more informed decision-making.
- **Enhance customer experience** through improved accuracy, responsiveness, and personalization.
- **Ensure compliance and reduce risk** with consistent, auditable processes.
- **Unlock scalability** without linear increases in headcount or cost.
- **Foster innovation** by freeing talent to focus on high-value, creative, and analytical work.

When positioned this way, **I-RPA shifts from a tactical cost-saving tool to a strategic enabler** - strengthening operational resilience and driving sustainable competitive advantage.

Measureable Key Performacne Indicators

The strength of an I-RPA business case lies in measurable KPI's.
These typically include:

- **Cycle time reduction** – How much faster is the process now?
- **Error rate decrease** – How much more accurate are outcomes?
- **Employee capacity gain** – How much high-value time is freed up?
- **Compliance improvement** – How many audit findings or incidents are avoided?
- **Increase in financial savings** (e.g. labor cost) – How much cost is saved?
- **Return on Investment (ROI)** – Ratio of financial gains or savings to total investment cost.

- **Bot Utilization Rate** – How much time actively used for productive tasks?
- **Scalability Index** – Ability to expand automation scope or handle increased volumes without proportional cost growth
- **Compliance Adherence Rate** – Percentage of processes meeting all regulatory and policy requirements.
- **Customer Satisfaction** – Measured impact of automation on customer experience.

By tracking these metrics, organizations can not only justify the initial investment but also continuously optimize their automation portfolio.

5. Common Pitfalls & Practical Guidance to Avoid Them

Despite the general promise of I-RPA inside the automation community, many organizations struggle to translate potential into measurable results. These failures are rarely due to the technology itself. Here are the most common pitfalls.

> ***"Only 35% of RPA initiatives move beyond the pilot phase due to lack of governance and process clarity."***
> *(Gartner, RPA State of the Market 2024)*

5.1 Starting with an inappropriate processes

A frequent mistake is automating processes simply because they are visible or popular internally, not because they are strategically impactful. This often leads to marginal gains and erodes confidence in automation initiatives.

➡ Avoidance Strategy

Establish a structured process selection framework that considers complexity, volume, business impact, and automation feasibility before committing resources.

5.2 Useage of RPA as a Standalone Tool

Sometimes organizations approach RPA as a one-off IT project rather than a strategic capability. In our opinion, it is different from a project, it is more a discovery into RPA that needs some repetitive cycles of improvement.

➡ **Avoidance Strategy**
Integrate RPA into the broader digital transformation strategy, aligning it with enterprise architecture, governance, and data strategy.

5.3 Underestimating Change Management

Even the most elegant automation can fail if employees see it as a threat or if adoption is inconsistent across departments.

➡ **Avoidance Strategy**
Invest in stakeholder engagement, clear communication, and training programs that position I-RPA as a value enabler rather than a job eliminator.

5.4 Governance & Scalability

Without clear governance, automation programs can quickly become **unmanageable**, with several numbers of RPA-bots, inconsistent data or -standards, and unclear ownership.

➡ **Avoidance Strategy**
Define an Automation Governance Model as early as possible - covering responsibilities, standards, ownership, compliance checks and scaling procedures.

5.5 Failing to Leverage AI Capabilities

In some of the initiatives companies stop at simple task automation, missing the opportunity to apply AI for decision-making, predictive analytics, or unstructured data processing.

➡ **Avoidance Strategy**
Think about to integrate AI from the start, even if in a phased approach, to unlock higher-value automation and maintain competitive advantage.

6. Governance & Process Selection

In many organizations, automation initiatives start with high ambitions but lose momentum over time. The reasons are rarely technical; they are almost always **structural and strategic**. Without clear strategy, support from C-Level, digital governance and careful process selection, automation becomes a patchwork of isolated tools, scattered solutions, and unmet expectations.

6.1 Governance is the Foundation of Sustainable Automation

Governance in automation is more than a set of rules - it is the **operating framework** that determines whether I-RPA delivers scalable business value or becomes a short-life experiment inside the company.

> ***"Organizations with mature automation governance frameworks are 3x more likely to achieve enterprise-wide scalability."***
> *(Everest Group, Intelligent Automation Maturity 2023)*

Strong governance provides

- Clear ownership and accountability – Every automation must have a designated process owner and a responsible technical lead.
- Strategic alignment – Initiatives are prioritized based on business objectives, not on who has the loudest voice in the room.
- Consistent development standards – From documentation to testing protocols, governance ensures quality and maintainability across the automation portfolio.
- Integrated compliance and security – Privacy, legal requirements, and cybersecurity safeguards are built into the automation life-cycle
- Ongoing performance measurement – Key performance indicators (KPI's) and ROI tracking ensure that automation remains a value driver, not a hidden cost.

6.2 Selection of an Appropriate Process

Not every process is worth automating, and not every automation will deliver the same level of impact. I-RPA is most effective when process selection combines strong analytics, strictness in applying standards and strategic foresight.

Criteria for selection

1. Volume & Frequency – High-volume, high-frequency processes offer the greatest potential for efficiency gains.
2. Rule-Based Logic – Tasks governed by clear, repeatable rules are ideal candidates.
3. Process Stability – Stable processes reduce rework and maintenance overhead.
4. Error Reduction Potential – Activities prone to human error can see dramatic quality improvements through automation.
5. Business Impact – Processes that influence revenue, cost savings, compliance, or customer experience should take priority.

➡ Pro Tip

For the highest chance of success, start with an already well-functioning process that operates within a clear, documented framework and is currently executed by humans. This ensures reliable input data, established workflows, and measurable outcomes — making it easier to demonstrate the value of automation quickly.

7. Data, Privacy & Security in Automation

In the digital environment beyond companies borders, data must be held secure and consistent. I-RPA means capturing data, to transform it and finally transferring it. In this scenario, every automated process becomes a potential entry point for misuse, data leakage, regulatory violations, or other forms of security breaches.
For many executives, the question is not whether automation is possible, the most challenging question is about privacy, security and compliance.

> *"Over 50% of compliance breaches in regulated industries are linked to manual data handling errors."*
> *(KPMG, Compliance and Automation Study 2023)*

7.1 Privacy-by-Design in I-RPA

Embedding privacy considerations into automation is no longer optional, it is a regulatory necessity and a trust-building measure with clients and stakeholders.

Core principles include

1. **Data Minimization**
   Only collect and process the data absolutely necessary for the task.
2. **Encryption in Transit and at Rest**
   Ensure data is secure both during transfer and in storage.
3. **Role-Based Access Control (RBAC)**
   Bots should only have the minimum permissions required to complete their task.
4. **Audit Trails**
   Maintain detailed logs for every automated process to track actions, changes, and anomalies.
5. **Anonymization & Pseudonymization**
   Especially important for training AI components within automation.

Example: An HR department implementing I-RPA for payroll used pseudonymized employee IDs in bot workflows. This allowed payroll processing without exposing sensitive names and addresses during automation testing.

7.2 Cloud vs. On-Premise

The choice between cloud-based and on-premises automation platforms is a strategic decision balancing scalability and security:

- Cloud Advantages – Lower infrastructure cost, easier scaling, and faster deployment.
- Cloud Risks – Data residency concerns, dependence on third-party security controls, possible exposure to multi-tenant vulnerabilities.
- On-Premises Advantages – Full control over infrastructure and data handling, better suited for organizations with strict compliance requirements.
- On-Premises Risks – Higher upfront investment, slower scalability, and the need for in-house expertise.

Many hybrid models are emerging, where sensitive processes run on-premises while less critical automations leverage the flexibility of the cloud.

➡ **Pro Tip**

When customer data is captured directly via a public-facing front end — for example, over the internet — and triggers an RPA process, security must extend far beyond basic TLS encryption. A robust architecture should immediately route all incoming data through a demilitarized zone (DMZ) and an API gateway, acting as a controlled entry point between public access and internal systems. Sensitive data should be tokenized or encrypted at the field level, removed from the public network as quickly as possible, and transferred into a protected back-end environment.

7.3 I-RPA Security in Practice

A robust security framework for automation should include:

- Centralized Credential Management – Avoid hardcoding credentials into scripts. It is better to use an **Identity Access Management (IAM)**
- Continuous Monitoring & Threat Detection – Use of appropriate analytics to spot unusual bot behavior.
- Regular Security Audits – Ensure automations stay compliant as processes, laws, and systems evolve.
- Incident Response Plans – Automation-specific procedures to follow international regulations like the GDPR.

8. I-RPA Readiness

The opportunities of I-RPA is compelling - but not every organization is prepared to gain the full potential. Rushing into automation without a readiness assessment can lead to expensive pilots that never scale, frustrated teams, and unmet expectations.

Readiness is not about having the latest technology - it's about having the right conditions for success. This means clarity on which processes to target, the quality and accessibility of your data, the maturity of your governance structures, and the cultural willingness to embrace change.

8.1 Key Dimensions of RPA Readiness

The following framework outlines the ten most critical dimensions to evaluate, ensuring that automation initiatives are strategically aligned, secure, and scalable from day one.

1. Process Clarity

- Are processes clearly documented with defined steps, decision points, and owners?
- Are they repeatable and rules-based, minimizing subjective judgment?
- Are processes stable over time, or do they frequently change due to market, regulatory, or operational shifts?
- Have exceptions and edge cases been mapped to avoid automation breakdowns?

2. Data Quality & Availability

- Are all required data sources accessible to automation tools without manual intervention?
- Is data structured and standardized, enabling efficient processing?
- How regularly is data cleaned, validated, and enriched to maintain accuracy?
- Are there clear ownership and stewardship roles to ensure ongoing data quality?

3. Technology Landscape

- Can existing systems integrate with automation platforms without excessive custom coding?
- Are APIs, connectors, or middleware readily available to enable integration?

- Are core applications stable and well-maintained, avoiding disruption to bot performance?
- Is there a scalable infrastructure (cloud/on-premise/hybrid) to support bot deployment and expansion?

4. Governance & Compliance

- Is there a formal governance framework guiding automation priorities and decision-making?
- Are compliance, data privacy, and security embedded into process design from the outset?
- Are roles and responsibilities for bot management, monitoring, and escalation clearly defined?
- Is there a process for auditing and documenting automation activities for regulatory purposes?

5. Change Management & Culture

- Are employees engaged early to position automation as a value-adding tool, not a threat?
- Is there a clear communication plan to explain benefits, scope, and impact?
- Are training programs in place to reskill staff for higher-value activities?
- Is leadership actively sponsoring and championing automation initiatives to drive adoption?

6. Scalability & Sustainability

- Can processes and bots be easily replicated across departments or locations?
- Is there a roadmap for expanding the automation portfolio over time?
- Is the underlying infrastructure scalable without significant rework?
- Are monitoring and performance optimization mechanisms in place for long-term sustainability?

7. Vendor & Partner Readiness

- Are there reliable technology partners providing ongoing support and maintenance?
- Are SLAs and response times for incident resolution clearly defined?
- Are software updates and security patches applied promptly?
- Does a partner ecosystem exist for specialized integrations or advanced capabilities?

8. Security Architecture

- Are network segmentation (e.g., DMZ, API gateway) and access controls in place?
- Are credential vaults used to securely store bot authentication data?
- Is end-to-end encryption implemented, not just TLS during transmission?
- Is there a documented incident response plan for RPA-related security events?

9. Performance Measurement & ROI Tracking

- Are KPI's defined to measure efficiency gains, cost savings, and process improvements?
- Are real-time performance dashboards available for operational monitoring?
- Are business cases regularly updated with actual performance data?
- Is ROI assessed both in financial and strategic terms?

10. Innovation & Continuous Improvement

- Is there a process to systematically collect and evaluate new automation ideas?
- Are lessons learned from previous projects integrated into the standard methodology?
- Is process mining used to identify further automation potential?
- Is the organization open to experimental or AI-driven automation approaches?

8.2 Typical Barriers to Readiness

- **Fragmented IT systems** that make integration costly.
- **Poorly documented processes** that require redesign before automation.
- **Data silos** that prevent end-to-end automation.
- **Lack of internal ownership**, leaving automation projects entirely vendor-driven.
- **Cultural resistance** stemming from job security concerns.

Governance in Multi-Platform Environments

Many enterprises operate in **heterogeneous IT landscapes** where different business units adopt different automation tools - Microsoft Power Automate, UiPath, n8n, or industry-specific solutions. Governance ensures interoperability and prevents redundant or conflicting automations.

9. Recommended next Steps to Assess your I-RPA Readiness

To translate potential into measurable impact, start with a structured self-assessment:

1. **Rate Each Dimension** – Score all 10 readiness dimensions – mentioned under point 8.1 Key Dimensions of RPA Readiness - from 1 (not ready) to 5 (fully ready).
2. **Identify Gaps** – Highlight any area scoring below a score of 3. These are your immediate priorities.
3. **Create a Roadmap** – For each gap, define actions, responsibilities, and timelines.
4. **Pilot Strategically** – Select one high-impact, low-complexity process as your first automation target.
5. **Track Progress** – Use KPI's to measure efficiency gains, error reduction, and compliance improvement from day one.

➡ Pro Tip

If internal resources are limited, consider running a facilitated readiness workshop with an experienced automation partner to accelerate alignment and ensure strategic fit.

10. Conclusion & Outlook

The journey toward **I-RPA** is both a technological evolution and a strategic transformation.
It's not simply about automating tasks - it's about reimagining how work gets done, how teams collaborate, and how value flows through the organization.

Over the course of this whitepaper, we have explored the challenges, opportunities, and frameworks that shape successful automation programs. We have looked at the intersection of Robotic Process Automation, Artificial Intelligence, and governance, and how they combine to create scalable, sustainable value.

As the digital landscape continues to evolve, one truth becomes clear; **Automation is** no longer an optional efficiency tool - it is becoming a **core capability** of competitive enterprises.

Those who act now position themselves to lead in a marketplace where **speed, precision, and adaptability** determine success. Those who delay may find themselves struggling to keep pace with faster, more agile competitors.

The road ahead offers a wealth of possibilities:

- Hyperautomation ecosystems that integrate RPA, AI, and advanced analytics.
- Industry-specific accelerators that bring automation to compliance, finance, HR, and beyond.
- Human-centric automation models that free people from repetitive work so they can focus on creativity, innovation, and strategic thinking.

But the key to unlocking this potential lies not in the technology alone - it lies in vision, governance, and the readiness to adapt.

In the coming years, the organizations that thrive will be those that view automation not as a one-off project, but as a **continuous, evolving discipline** - one that is woven into the very fabric of their operations.

Final Thought

The question is no longer if automation will redefine your business - it is how quickly and effectively you will embrace it. The opportunities are here, the tools are ready, and the future is waiting.

Thank you for engaging with this extensive whitepaper. We look forward to partner with you on your Automation & AI journey - turning strategic vision into operational excellence, and experimentation into enterprise-wide transformation.

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Note on Editorial Optimization

This text originates from a manually drafted version created by the OBEYA-CONSULTING team.
AI-based tools were employed to refine linguistic clarity, ensure a consistent, reader-friendly tone and support a professional yet accessible style.
As the authors are not native English speakers, idiomatic expressions and culturally specific phrasing were deliberately minimized to enhance international readability and neutrality.
AI was also utilized for quality assurance purposes – specifically for the detection and correction of grammatical, spelling, and punctuation errors.
Full responsibility for the content, messaging, and final approval remains solely with the authors.
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