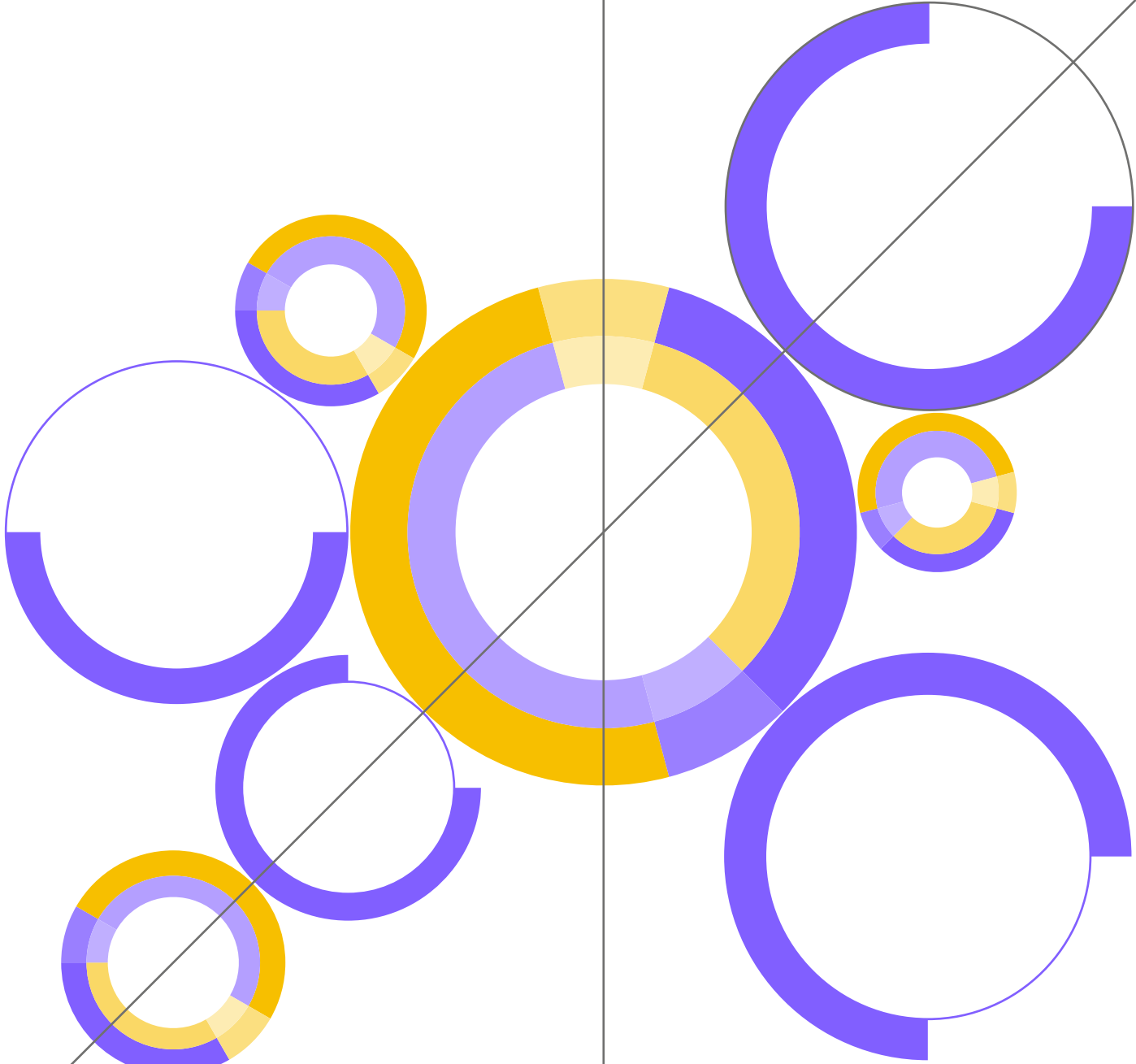


**RICOH**



# Accelerating the Power of Information\_ 2025

Industry report  
on technology's impact  
on **life sciences**



# Preface

Life sciences professionals perform critical work, from researching and developing new life saving medications, to conducting clinical trials, to developing tailored therapies and medical devices, to manufacturing products efficiently while adhering to regulations. Whether they hold a research, clinical, manufacturing, front or back-office role, each employee sits at the intersection of innovation and necessity. Yet, the industry faces critical external and internal challenges, chief among them compliance and regulatory issues, as well as fragmented workflow processes. Together, these factors lead to administrative burdens such as duplicative document creation and manual processes that hinder progress, slow innovation and delay products getting to market.

The underlying challenge for life sciences organizations? Achieving greater productivity without compromising Good Manufacturing Practices (GMP). This requires data agility and workflow optimization — objectives best achieved through advanced automation.

Automation solutions can help reduce errors, eliminate manual backlogs, and enable comprehensive data collection and distribution. By freeing employees to focus on high-value tasks, automation fosters efficiency and innovation. This report explores automation as the path forward to greater productivity for life sciences. You'll find more detail and valuable insights here, in our latest industry report:

## ***Reducing administrative bottlenecks in life sciences***

Accelerating outcomes: greater productivity through automation

“In life sciences, time isn’t just a resource — it’s a force that multiplies employee efficacy. Leading companies must focus on streamlining manufacturing processes, reducing inefficiencies, and accelerating innovation to improve time to market. The fundamental outcome is the ability to amplify the value of your employees’ effort. After all, technology must be built to serve human needs.”

— Dave Laux, Vice President, Ricoh North America



4.1%

AVERAGE INTERNAL RATE OF RETURN  
LATE-STAGE PIPELINE PRODUCTS

6.5% vs.

3.6%

COMPOUND ANNUAL GROWTH RATE  
BETWEEN 1994 TO 2023 VS. 2014 TO 2023

19%

BIOPHARMACEUTICAL PROFESSIONALS  
WHO DESCRIBE THEIR SYSTEMS AS  
FULLY DIGITAL AND CLOUD-BASED

1.5X

SUCCESSFUL TRANSFORMATIONS  
BRING MORE VALUE THAN  
MANAGEMENT TEAMS INITIALLY PROJECT

# Why has output and profit growth slowed?

## Time-consuming admin process and complex workflows lead to lower productivity

With falling productivity and tighter competition in every category, life sciences teams must ask how they can trim costs to make development and manufacturing more profitable. To do that, they must understand the cause of productivity declines. The issue stems from a combination of inefficiencies in administrative processes, Good Manufacturing Practices (GMP) and Good Documentation Practices (GDocP), and compliance workflows. While GMP and GDocP are vital to ensuring safety and quality, antiquated processes surrounding these practices often hinder efficiency.

## Average internal rate of return falls below cost of capital, exacerbating productivity decline

**4.1%**

Average internal rate of return of late-stage pipeline products<sup>1</sup>

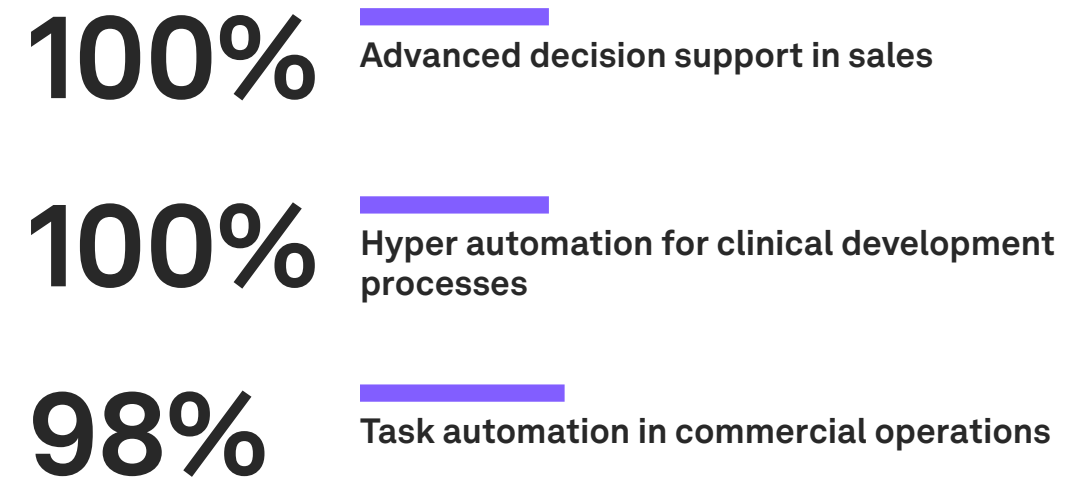
## To create lasting improvement, drill down to the root

The root causes of productivity challenges can be traced to several factors. Manual tasks play a significant role at every phase, as reliance on paper-based processes slow employees' ability to complete routine processes. Whether developing new chemical compounds or creating "Software as a Medical Device," tedious tasks increase the risk of human error and deviations. And few, if any, employees find these tasks satisfying when they know they could be solving more important challenges.

Operational clarity, or the lack of it, also remains a significant issue, as many organizations struggle with visibility into end-to-end processes, resources, and data within the manufacturing environment. This lack of clarity not only reduces productivity but also limits the swift responses to challenges and ability to seize opportunities. Fragmented workflows further exacerbate inefficiencies, with departments often operating in silos that hinder essential processes like data analysis, information sharing, and trial preparation. Adding to these challenges is mounting complexity, with stringent regulatory standards demanding meticulous documentation and traceability at every stage of production.

To some degree, these inefficiencies ripple throughout every life sciences organization today. Each delay compounds the next, affecting clinical timelines, conformity assessments, and ultimately production schedules and output. In industries like pharma, where the average internal rate of return on innovation hovers around 3%,<sup>2</sup> there is no time to waste in improving manual processes or legacy workflows. Streamlined processes and interconnected systems are essential for fostering collaboration and achieving operational efficiency.

## Where professionals say tech like AI is needed to improve operational efficiency<sup>3</sup>



Life sciences organizations face many hurdles that are out of their control. But they directly control one of the most effective levers to innovations – operational efficiency.

<sup>1</sup> Deloitte, *Unleash AI's potential: Measuring the return from pharmaceutical innovation – 14th edition*, April 1, 2024  
<sup>2</sup> McKinsey & Company, *Against the Odds: How Life Sciences Companies Excel in Large Transformations*, September 14, 2022  
<sup>3</sup> Gartner, *2023 Gartner Business Outcomes of Technology by Use Case Survey*, 2023

# Calculating the financial, human, and competitive costs

## A challenging environment? Such is life sciences.

As one of the most heavily regulated industries, the life sciences fields operate under immense pressure to innovate while ensuring strict compliance with FDA 21CFR Part 11, EMA, and other global standards. Solving for administrative tasks, managing protocols and clinical development, validating and re-validating processes, and compiling documentation taxes workers' finite mental and physical energy. And when employees can't operate at the top of their abilities, their employers pay the cost. In fact, the single greatest cost driver for many large healthcare and pharmaceutical companies is SG&A expenses.<sup>4</sup>

Reduced innovation has direct effect on growth

**6.5% vs. 3.6%**

Compound Annual Growth Rate between 1994 to 2023 vs. 2014 to 2023<sup>5</sup>

Failing to address productivity challenges results in cascading consequences across the organization. Rising costs are one of the most immediate outcomes, as inefficiencies in R&D, compliance, production and communications inflate operational expenses. These rising expenses strain budgets, leaving fewer resources for innovation. Yet, 39% of life sciences leaders say that the solution is more investment to improve R&D productivity,<sup>6</sup> not less.

Without operational clarity, organizations have difficulty optimizing workflows and reducing waste, further compounding financial pressures. Beyond product development, financial

pressures extend to contract management, IP protection, and regulatory compliance, with 45% of Chief Legal Officers tasked with cutting costs by finding new efficiencies.<sup>7</sup>

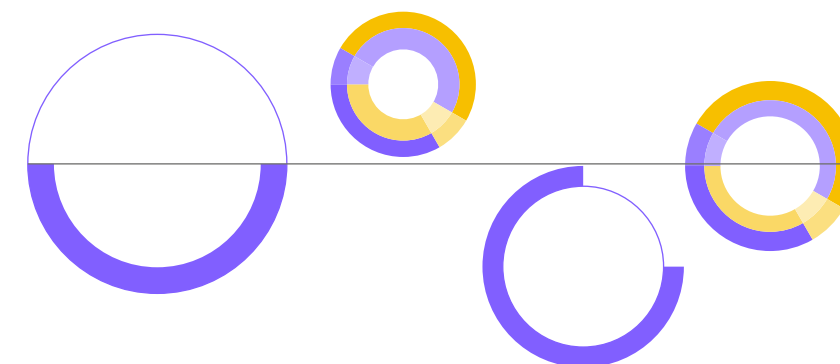
Delays are another critical consequence, with prolonged timelines for approvals, trials, and commercialization slowing market responsiveness. These delays often stem from fragmented workflows, where silos prevent seamless collaboration and data sharing.

Many find clinical and manufacturing trial regulations an increasingly large hurdle to their innovation – in fact, 30% say it is a significant barrier.<sup>8</sup> These mounting complexities – combined with outdated processes – delay the development of new drugs and treatments.

Administrative burdens, and reliance on repetitive manual tasks amplifies workforce dissatisfaction and burnout. The reality of high stakes but inefficient processes lead to talent loss in an industry already constrained by a limited talent pool. This attrition further stresses remaining employees and diminishes organizational capacity.

Operational inefficiency is one of the most significant levers within an organization's control. Addressing it can unlock innovation and sustain competitive advantage.

Broader impacts include reduced competitiveness, as lengthened time-to-market diminishes an organization's ability to capture market share and respond to competitors. Inefficient processes also make organizations less attractive for partnerships and funding opportunities, further hindering progress. The cumulative effect is clear: inefficiencies at the operational level have far-reaching consequences across the entire ecosystem, threatening both profitability and global health outcomes.



<sup>4</sup> McKinsey & Company, *Against the Odds: How Life Sciences Companies Excel in Large Transformations*, September 14, 2022  
<sup>5</sup> Drug Discovery Today, *The Pharmaceutical Productivity Gap – Incremental Decline in R&D Efficiency Despite Transient Improvements*, November 2024  
<sup>6</sup> Deloitte, *2025 Life Sciences Outlook*, December 10, 2024  
<sup>7</sup> Legal Community Mena, *ACC 2024 CLO Survey: The Journey of Today's Chief Legal Officer*, January 1, 2024  
<sup>8</sup> DLA Piper, *Life Sciences Index 2024 Innovation and Growth*, June 6, 2024

# Automation as production catalyst for growth

## Streamlining workflows and building cohesive operations

Automation is the key to overcoming the productivity decline and fostering innovation in life sciences. By streamlining clinical and manufacturing processes, reducing manual tasks, and improving data management, automation delivers measurable benefits across the value chain. Technologies like smart document processing enable the classification, indexing, and extraction of data related to disease research, treatment trials and manufacturing, taking workers out of “admin mode” and allow efficient and secure information management. This lays the foundation for scalable, compliant operations. Benefits extend beyond core functions to support IT, facilities, finance, and logistics with advanced inbound communication systems, such as automated mailroom solutions, capture, analyze, and accelerate information flowing to teams, reducing delays and improving decision-making.

## Who is leveraging automation today?

# Only 19%

Biopharmaceutical professionals who describe their systems as fully digital and cloud-based<sup>9</sup>

In addition to driving efficiency, solutions like Gen AI powered systems significantly enhance compliance by ensuring robust documentation and traceability throughout every stage of production. By aggregating and analyzing incredible amounts of data, these tools reduce the likelihood of human error and regulatory penalties, creating a seamless framework to meet stringent industry standards.

## What do leaders want from AI?<sup>10</sup>

**28%** Improving existing products

**27%** Innovating new product and service development

**22%** Streamlining processes

## Leveraging automation, from research to manufacturing

- Shorter time-to-market for new treatments
- Improved compliance with GMP and GLP through error reduction and process visibility
- Lower operational costs by minimizing wasted admin time and optimizing resources, including documentation costs
- Continuously elevated manufacturing efficiency with insights pulled from automated workflows
- Enhanced inter-office collaboration and success through centralized data systems

<sup>9</sup> BioProcess International, *Reimagining the Future of Biopharmaceutical Digitalization*, September 20, 2024

<sup>10</sup> Deloitte, *The AI Dossier*, 2021

# How life sciences reinvents itself – adaptable automation solutions

## Setting a higher bar for quality control, compliance and proactive action

Automation offers a transformative set of solutions for sluggish or declining productivity. Automated workflows address inefficiencies across the entire value chain by streamlining manual processes, such as regulatory reporting, and freeing talented workers for more meaningful work. It's an understatement to say advanced solutions like automation are changing how you work. The real effect is a change to the work itself.

### Finding ROI to fuel innovation

# 1.5X

Successful transformations bring more value than management teams initially project.<sup>11</sup>

## Prioritizing efficiency: where manufacturing teams and others find improved productivity

Where will organizations find their largest efficiency gains? It will vary for each company depending on business goals, transformation progress and a host of other factors. The smart recommendation is to first draw out a map to your destination, perform a data-driven, fact-based assessment of the ROI potential, prioritizing the initiatives where you can see the most progress, most quickly and with as little disruption to your workflow. For instance, you may begin with refining SOPs, moving next to fault tree analysis. Whatever your first move, you'll likely find immediate gains in these areas.

<sup>11,12</sup> McKinsey & Company, *Against the Odds: How Life Sciences Companies Excel in Large Transformations*, September 14, 2022

## 1. Document Control

For leaders who want to reduce their teams' administrative burdens, modern document control systems leverage AI and machine learning to digitize and automate document classification, indexing, and retrieval. These tools enable teams charged with document lifecycles and Document Change Orders (DCO) to reduce time spent searching, recreating, or organizing documents, all while maintaining compliance. This alone has the potential to save hours of tedious work, because document control isn't your actual work – it's the necessary task that gets in the way of the work.

Automated document processing is the first step towards achieving end-to-end process automation and continuous inspection readiness. It's also central to a more flexible organization, allowing document intake and processing no matter which office or country employees are working in.

## 2. Workflow Automation

We see workflow automation as one of the most promising solutions to streamline repetitive processes, such as sharing trial data and process specifications across teams, to auditors and with investors or board members. Automated processes help capture production records, design controls, material lists, and other documents to ensure production and distribution stay on schedule. Each seemingly small step forward – across the organization – adds up to measurable productivity gains. In fact, 75% of the value that companies undertaking digital transformation found came from improving operations across marketing and sales, manufacturing and procurement.<sup>12</sup> The value comes from automating across many areas, not just one.



# How life sciences reinvents itself – adaptable automation solutions

## 3. Regulatory Compliance

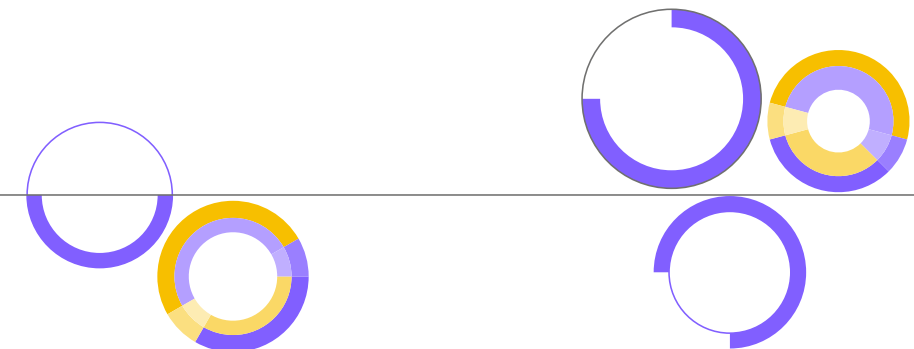
As a critical function, no life sciences company can risk – nor would we recommend – cutting corners with regulatory submissions or compliance as the result could be denied approval for products. We do advocate for making the process as seamless as possible. Automation solutions can help enhance audit readiness by streamlining reporting and incorporating tracking tools for end-to-end digital document trail visibility, and greater accountability than ever possible. Further, new tools can reduce the expense of compliance-related data management and the likelihood of corrective or preventative actions that could delay delivery of new surgical instruments, for instance.



## 4. Supply Chain Optimization

Stability requires having both visibility and influence over as many external factors as possible. AI-driven supply chain optimization collects and analyzes real-time data to improve forecasting accuracy, mitigate disruptions, assess Cost of Quality (COQ) and recommend actionable steps to reduce inefficiencies across the value chain, ensuring consistent access to critical raw materials, precise inventory management, and streamlined production timelines for therapies and medical devices. Why is this so important? Because more than 50% of life sciences companies have lost revenue in the past 12 months because of supply shortages or other constraints. And more than 60% have felt pain from suppliers that are unable to meet new operational or virtual requirements.<sup>13</sup> In these situations, AI can help leaders dynamically respond to market changes, recommending the best course of action to their supply chain operators, or contract manufacturing organizations, rather than being at their mercy.

### Feeling optimism about Gen AI in 2025<sup>14</sup>



<sup>13</sup> Deloitte, 2023 Global Life Sciences Outlook, May 17, 2023  
<sup>14</sup> Deloitte, 2025 Life Sciences Outlook, December 10, 2024

# Automating processes to unlock productivity: results we're bringing Ricoh customers

## Speeding document delivery to maintain productivity for a distributed biomed firm

**The Challenge:** When 90% of this Fortune 500 biomedical firm's employees began working remotely, leadership faced an operational challenge. To receive more than 1,800 pieces of external and internal mail monthly, recipients had to physically come to the office. When needed, on-site mailroom staff would open, scan, and email envelope contents — a time-consuming, unsustainable process.

**The Solution:** Ricoh analyzed mail volume, distribution, and processing workflows to identify the best digital mail solution. We integrated a user-friendly digital mailroom service to open and scan physical mail, making it easily accessible through a centralized secure cloud portal.

“We had some scanning abilities, but nothing as robust as the digital mail system implemented by Ricoh. Our remote employees no longer need to come to the office just to retrieve time-sensitive mail.”

— Senior Facilities Specialist

**The Results:** This permanent solution now ensures digital mail is delivered within 24 hours, putting critical business information in the right hands. Monthly, more than 5,000 images are captured with minimal risk of human error. Employee satisfaction has increased significantly, with remote workers no longer needing to visit the office for time-sensitive mail.

## 5,000 Images captured monthly

## Eliminating returned submission packages for a global pharma company

**The Challenge:** A major pharmaceutical company faced regulatory issues related to submission document production. Challenges included complex regulatory requirements, myriad regional document standards, prolonged submission times, and returned packages due to missing documents or errors.

**The Solution:** Ricoh implemented smart document processing and workflow management to support global document production. Each office was equipped with state-of-the-art hardware and software, including a secured content management system (CMS).

**The Results:** Over a 7-year partnership, there have been exactly zero defects or returned packaging for a 100% on-time submission record. Rework to correct errors was reduced, automation sped submissions by 3 to 5 days and increased monthly totals to 100+.

## Zero Defects or returned packaging

## Reducing major expenses and operating costs for a Fortune 500 pharma leader

**The Challenge:** This pharmaceutical client sought to aggressively reduce their print facility's real estate footprint to save costs while also finding a partner for services outside their core competency. With a tight schedule and a wide range of applications to manage, they needed a seamless transition.

**The Solution:** Fortunately, they found their solution with one team – Ricoh. Because of our sector experience, we could create a plan to effectively migrate their in-house design and print production operations without disruptions to their productivity.

**The Results:** Business continuity was sustained, overhead costs were reduced by 30-50%, and employee workflows were maintained to keep morale high. The partnership has established a new operational benchmark for life sciences companies.

## 30-50% Estimated annual cost savings



# RICOH

## An opportunity unlike any other

The life sciences fields can be arduous, yet incredibly rewarding. Few vocations combine the rigor of scientific discovery with genuine care for humankind. It's this unique combination that earns the industry a heightened level of commitment from its workers and gives it significant importance to society's progress. The industry has the opportunity and tools to support innovation today to ensure new treatments and financial viability tomorrow. It begins by understanding where time is being lost, then applying solutions like automation and improved workflows to recapture and transform that time into innovations, across labs, offices and manufacturing facilities.

### We are accelerating the power of information in life sciences today.

Accelerating adoption of automation.

Accelerating workflow optimization.

Accelerating the discovery of cost-cutting solutions.

### For life sciences, this means that we are accelerating the...

Power to improve compliance.

Power to improve speed to market.

Power to improve productivity.

### That's how we accelerate the power of information.

## Ricoh, a trusted partner

Today, for over 1.4 million customers around the world, Ricoh is unleashing the power of information to create better workplace experiences, streamline and connect workflows through process automation, and drive operational efficiency. Let's work together to discover how we can put information to work for you.

**Our team of life sciences experts is ready to help transform your information into greater manufacturing efficiency and competitive advantage.**

