

SIPOC and the Handoff Problem

Why Process Breakdowns Often Occur Between Activities, Not Within Them

EXECUTIVE SUMMARY

Organizations invest significant effort in documenting and improving their business processes. One of the most widely used tools for this purpose is the SIPOC framework (Supplier, Input, Process, Output, Customer), which helps teams define process boundaries, identify stakeholders, and establish a common understanding of how work flows through an organization.

While SIPOC is highly effective for process scoping, many improvement initiatives stall because teams assume that documenting a process is the same as understanding it. In reality, many operational failures do not occur within individual process steps. They occur at the handoff points where work, information, accountability, or ownership moves from one person, team, or system to another.

Missed communications, incomplete data, delayed approvals, unclear ownership, and disconnected systems frequently create bottlenecks that impact customers and business performance.

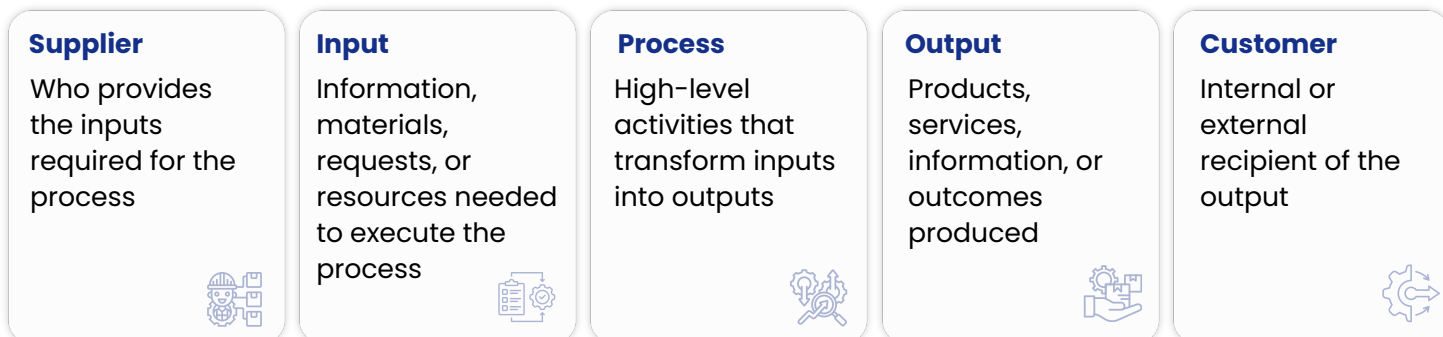
This paper explores:

- What SIPOC is and why organizations use it.
- Why process handoffs are often the hidden source of inefficiencies.
- How handoff analysis complements SIPOC.
- The growing role of AI in detecting, managing, and eliminating process handoff failures.
- How both approaches fit within process improvement frameworks such as DMAIC.

UNDERSTANDING SIPOC

SIPOC is a high-level process mapping tool designed to establish a shared understanding of a process before detailed analysis begins. It helps teams define the scope of a process and identify key stakeholders involved.

The Five Components of SIPOC



A SIPOC model helps answer one critical business question: "What does this process consist of?"

A PRACTICAL EXAMPLE: ORDERING A PIZZA

Supplier	Input	Process	Output	Customer
Customer	Pizza Order	Receive Order	Prepared Pizza	Customer
Kitchen Team	Ingredients	Prepare Pizza	Packaged Pizza	Delivery Team
Delivery Team	Delivery Address	Deliver Order	Delivered Meal	Customer

At first glance, the process appears straightforward and well-structured. However, successful execution depends on much more than the individual activities themselves.

THE HANDOFF PROBLEM

Many organizations focus heavily on improving individual activities while overlooking what happens between them.

Consider the pizza delivery example:

- ✓ The order is captured correctly.
- ✓ The kitchen prepares the pizza accurately.
- ✓ The delivery driver follows the route.
- ✓ The customer still receives the order late.

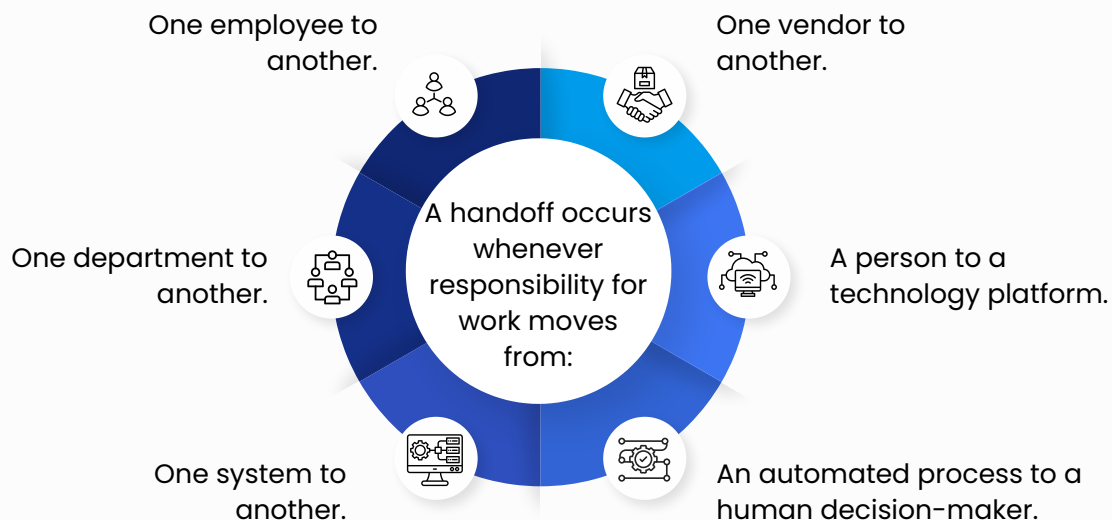
What went wrong?

The issue may not lie within any individual step. Instead, the problem may have occurred during a handoff:

- ✗ The kitchen was not notified immediately after order receipt.
- ✗ The delivery team received incorrect customer details.
- ✗ An order status update was not communicated.
- ✗ Packaging information was incomplete.

These "seams" between process activities are where delays, rework, confusion, and customer dissatisfaction often originate.

WHY HANDOFFS MATTER



Each transition introduces risk.

Common handoff challenges include:

Information Loss

Critical context may be lost when work changes hands.

Delayed Responses

Tasks may sit idle waiting for the next owner.

Different Priorities

Departments may optimize their own objectives rather than the end-to-end customer experience.

Ownership Gaps

Responsibilities may become unclear between teams.

Data Quality Issues

Incomplete or inaccurate information can move downstream unnoticed.

MOVING BEYOND SIPOC: HANDOFF ANALYSIS

SIPOC identifies process components. Handoff analysis identifies process vulnerabilities.

A structured handoff review examines each transition point by asking four key questions:

What Is Being Transferred?

Examples: Customer information | Documents | Product orders | Service requests | Approvals

Who Is Sending It?

The originating person, team, application, or supplier.

Who Is Receiving It?

The next owner responsible for processing the work.

What Could Go Wrong?

Potential risks include: Missing information | Incorrect data | Delays | System failures | Ownership confusion

By answering these questions, organizations transform a SIPOC diagram into a process risk map.

SIPOC ALONE VS SIPOC WITH HANDOFF ANALYSIS

Area	SIPOC Only	SIPOC with Handoff Analysis
Primary Purpose	Define process scope	Identify process risks
Key Question	What does the process contain?	Where does the process break down?
Output	Process overview	Process risk map
Best Use Case	Define Phase	Analyze Phase
Improvement Value	Shared understanding	Root cause identification

Organizations that stop at SIPOC often gain visibility but fail to identify why performance issues occur. Handoff analysis provides the missing layer of insight.

REAL-WORLD EXAMPLES OF HANDOFF FAILURES

Example 1: Employee Onboarding

Process Flow



Handoff Challenge

A candidate accepts the offer successfully, but laptop provisioning is delayed because HR did not submit access requests on time.

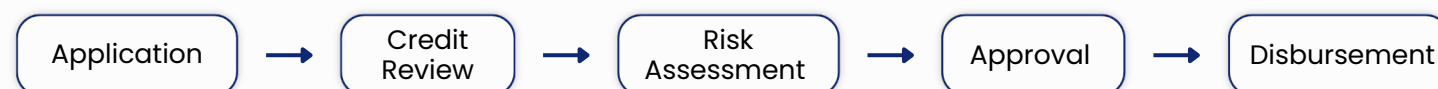
Impact

- Delayed first-day productivity
- Poor employee experience
- Increased support requests

Learning The hiring process succeeded, but a handoff failure created operational disruption.

Example 2: Loan Processing

Process Flow



Handoff Challenge

The credit review team completes its assessment, but supporting documentation is not transferred correctly to underwriting.

Impact

- Rework
- Increased turnaround times
- Customer frustration

Learning The issue occurred between teams rather than within either team's process.

Example 3: Customer Support Operations

Process Flow



Handoff Challenge

The service desk escalates a case without including customer interaction history.

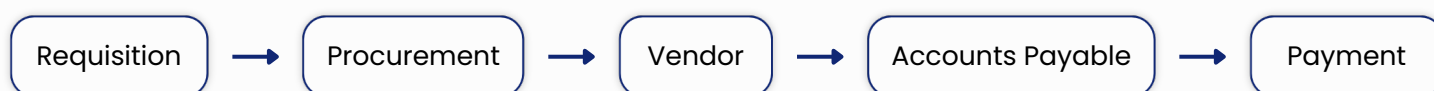
Impact

- Customers repeat information
- Extended resolution times
- Reduced satisfaction scores

Learning Poor context transfer can negatively affect customer experience even when all teams perform their responsibilities correctly.

Example 4: Procure-to-Pay Process

Process Flow



Handoff Challenge

Goods are received, but receipt confirmation is not communicated to Accounts Payable.

Impact

- Payment delays
- Supplier dissatisfaction
- Potential contractual penalties

Learning Visibility gaps often occur at process handoffs.

THE EMERGING ROLE OF AI IN PROCESS HANDOFFS

Artificial Intelligence is increasingly being applied not only to automate activities but also to improve the quality of process handoffs themselves.

Detection	Orchestration	Elimination
AI-powered process mining tools analyze system logs from ERP, CRM, service management, and workflow platforms to identify where work stalls. Benefits include: › Bottleneck identification › Process variance analysis › Visibility into actual workflows	AI can actively manage handoffs by: › Assigning ownership › Sending reminders › Escalating delays › Monitoring SLA compliance Benefits include: › Reduced idle time › Faster responses › Improved accountability	In some situations, AI removes the need for handoffs altogether. For example: A customer support AI assistant may gather context, resolve inquiries, and complete the transaction without transferring work between multiple support agents. Benefits include: › Faster resolution › Reduced rework › Better customer experience

This represents a significant shift from traditional process improvement. Instead of improving a weak handoff, organizations can sometimes eliminate it entirely.

SIPOC AND HANDOFF ANALYSIS WITHIN DMAIC

Both approaches play important roles within Six Sigma's DMAIC methodology.

DMAIC Phase	Key Question	Role of SIPOC & Handoff Analysis
Define	What process are we improving?	SIPOC establishes boundaries and stakeholders
Measure	What should we measure?	Outputs and customer requirements drive metrics
Analyze	Why are issues occurring?	Handoff analysis identifies breakdown points
Improve	What changes should be made?	Improvements target identified handoff risks
Control	How do we sustain improvements?	Updated SIPOC becomes the operational baseline

Together, the tools create a structured approach to understanding and improving business processes.

COMMON CHALLENGES

Organizations should be aware of several practical limitations.



SIPOC Must Be Maintained

Processes evolve over time. Changes in systems, suppliers, policies, and organizational structures can quickly make documentation outdated.



Simplicity Can Hide Complexity

The high-level nature of SIPOC is valuable for scoping, but it can create the illusion that a process is fully understood.



Handoff Analysis Requires Transparency

Teams must be willing to openly discuss breakdowns and operational pain points.



AI Depends on Data Quality

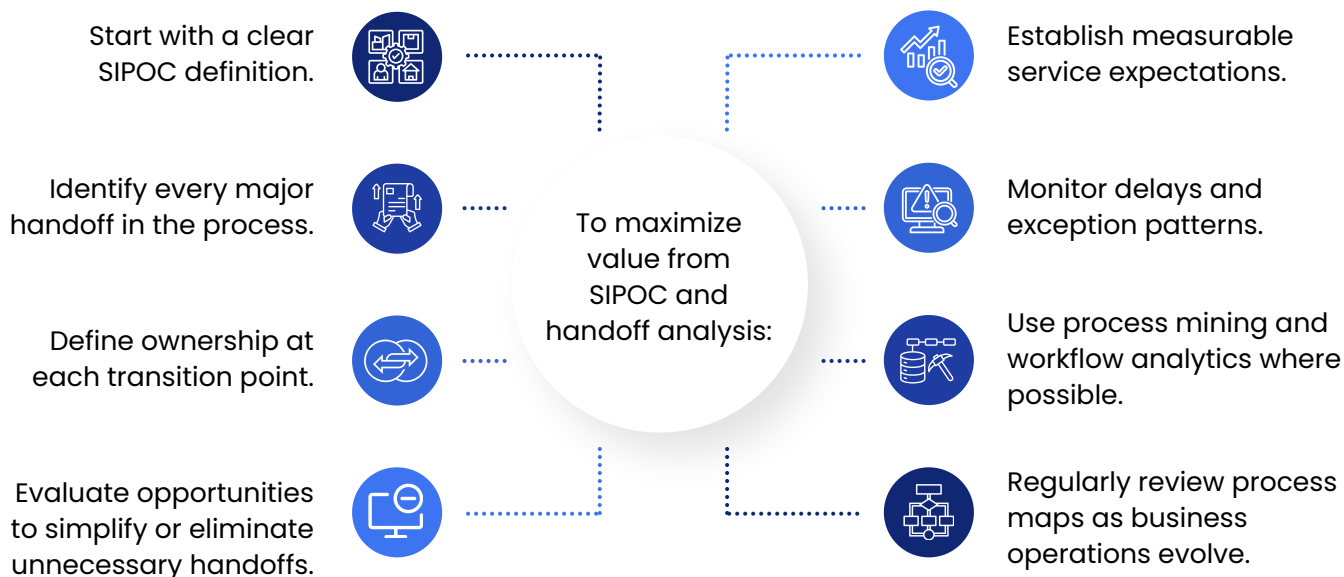
AI-based monitoring and orchestration work best when processes generate clean, structured, and traceable data.



New Risks Can Be Introduced

Removing handoffs through automation may improve efficiency but can also concentrate operational risk in technology platforms and AI models.

BEST PRACTICES FOR ORGANIZATIONS



CONCLUSION

SIPOC remains one of the most effective tools for defining and scoping business processes. However, understanding a process is only the beginning. True operational challenges often emerge at the transition points where work, information, and accountability pass between people, teams, and systems.

Organizations that combine SIPOC with structured handoff analysis gain a more realistic view of how work actually flows and where performance issues originate. By identifying and strengthening these critical transition points, businesses can reduce delays, minimize rework, improve customer experiences, and build more resilient operations.