



# ORDER-TO-CASH: MANAGING FOR SUCCESS IN DISRUPTIVE TIMES

APQC® DSCI  
DIGITAL SUPPLY CHAIN INSTITUTE

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# INTRODUCTION

In 2021 and 2022, APQC and the Digital Supply Chain Institute (DSCI) collaborated on an in-depth examination of how organizations are handling and improving their end-to-end order-to-cash (O2C) process during turbulent times. Organizations need strong foundational processes in times of disruption and rapid change. The global pandemic has fundamentally changed how organizations manage for success. In addition, there is pressure from customers who have higher expectations of speed and transparency in their business transactions, consistent with their personal consumer experiences.

The O2C enterprise process is a primary touchpoint for customers and impacts many internal functions including supply chain and finance. This research delves deeper into specifics of the O2C process, as both APQC and DSCI members have asked for a more nuanced understanding of what variables improve the O2C process and, thus, improve both the customer experience and the organization's operational results.

For this joint research, the methodology incorporated a detailed survey in late 2021 with 177 global participants, focused on how organizations are governing, measuring, automating, and improving O2C as an end-to-end process. Participants represented large, primarily B2B (business-to-business) organizations across 12 industries, with 70 percent reporting over \$1 billion in annual revenue. Respondents were C-suite and senior executives, process owners and managers across the multiple functions that comprise O2C. Additionally, the research team conducted in-depth case study interviews, evaluated data from prior APQC O2C surveys, integrated APQC Benchmarks on Demand metrics, and incorporated thought leadership from both DSCI and APQC.

First the basics - *what is order-to-cash (O2C)*? It is the end-to-end process that involves receiving and fulfilling customer requests for goods or services and getting paid for those goods or services (Figure 1).



(Figure 1)

A key characteristic of O2C is that the process begins and ends with the customer. It spans multiple internal functions such as sales, order management, supply chain, and finance. Optimizing the speed and effectiveness of the O2C process improves customer satisfaction and the bottom line. The top key performance indicators (KPIs) organizations use for order-to-cash reflect this impact:

- // **Cycle time of the end-to-end O2C process**
- // **Day Sales Outstanding (DSO)**
- // **On-Time and In-Full (OTIF) order performance**
- // **Cost and full-time equivalent employees (FTEs) to perform the O2C process**

Why is the Digital Supply Chain Institute so interested in order-to-cash? The answer is simple – it's very hard to be good as a supply chain if your O2C process is not effective – the two are inextricably entwined. The supply chain's relationship with the customer is built upon the O2C process. As an example, the supply chain can't start working on an order until it is visible to manufacturing. DSCI believes the supply chain should flip from focusing on the back end of the business (where costs have traditionally decided strategy) to the front side, the customer side. To implement what DSCI describes as a Frontside Flip, it is essential that companies break down business unit or departmental silos that inhibit the flow of critical supply chain information.

At APQC, many of our members are making a shift: they are moving from functional alignment toward a greater focus on end-to-end processes, and O2C is often one of first processes they tackle. This move to end-to-end process management presents certain struggles, most commonly the challenge of identifying measures that encapsulate the process' value. With the right KPIs, an organization can focus all participants in the end-to-end process on a shared goal that aligns with the process' strategic purpose. Through the research presented in this report, we make the business case that a move to an end-to-end process does benefit an organization. We share best practices and enablers that yield better O2C outcomes. We have also identified top performers who stand out largely because they adopted these best practices and enablers (see the next page.) And we explore key O2C topics, diving into relevant case studies that illustrate how O2C can help an organization manage for success in disruptive times.

# TOP PERFORMERS DO IT DIFFERENTLY

As part of this research, APQC and DSCI created a profile of top performing order-to-cash organizations. We compared those top performers to other respondents, allowing us to find differences and commonalities between both groups.

**Definition of top performers**—From the population of 177 responding organizations, 21 respondents, or 12 percent, were deemed to be top performers. Top performers are defined as those organizations meeting the following criteria:



## DESCRIBING TOP PERFORMERS

- // Top performers have better DSO (median of 35 days vs. 36 days).
- // Top performers have better on-time in-full (OTIF) performance (median of 94 vs. 92 percent).
- // Top performers need fewer median FTEs to perform the O2C process per \$1 billion of revenue (48.3 FTEs vs. 58.3).
- // From a demographic perspective, top performers are mixed regionally. Only 14 percent of top performers are from the U.S. and Canada, compared to 32 percent of other respondents. However, more top performers are based in Asia Pacific (43 percent) compared to 28 percent of other respondents.
- // In terms of ownership, 84 percent of top performers are privately held compared to 16 percent of other respondents.

## IMPROVED ORDER MANAGEMENT VISIBILITY AND ACCESS

- // Among top performers, sales teams, an administrator, or order management is less likely to perform manual order entry into an enterprise resource planning (ERP) system (19 vs. 42 percent).
- // Sales teams at top performers are more likely to access a web portal with real-time order and shipment information than sales teams at other respondent organizations (95 vs. 65 percent)
- // A significantly higher percentage of top performers' customers access a web portal with real-time information on order and shipment status (81 vs. 56 percent).
- // A significantly higher percentage of top performers' customers can receive order and shipment status on their mobile phones (71 vs. 35 percent).
- // When an order changes status or is shipped, 81 percent of top performers' customers receive push notifications, compared to 61 percent of other organizations' customers.

## GREATER AUTOMATION

- // Top performers are significantly more automated in their end-to-end O2C process: 67 percent of top performers report that their O2C process is 76-100 percent automated, compared to 36 percent of other respondents.
- // In terms of use of process automation, 48 percent of top performers are at the advanced end of the automation scale, using machine learning (ML) and/or artificial intelligence (AI). By contrast, only 34 percent of other respondents use ML and/or AI - a 14 percent difference - and 10 percent of other organizations indicated they use no automation.
- // When asked about future O2C improvement implementations, 71 percent of top performers said they want to add more automation components within the O2C process such as robotic process automation (RPA) or intelligent workflows, compared to only 46 percent of other respondents.
- // Top performers use RPA for the sales configure/price/quote (CPQ) process significantly more than other respondents (48 vs. 17 percent.) In addition, they use RPA for multiple O2C processes 24 percent of the time, compared to 12 percent of others.
- // Similarly, top performers use ML for the sales CPQ process significantly more than other respondents (38 vs. 15 percent.) They also use ML for multiple O2C processes 24 percent of the time, compared to 10 percent of others.

## DATA QUALITY

- // Top performers have higher quality, "cleaner" customer master data: 76 percent of them report that customer data is synchronized and can flow seamlessly between systems, compared to only 46 percent of other respondents.
- // Top performers are more likely to look at completeness as a data quality requirement for error-free order (86 vs. 51 percent).

## OBSERVATION

In an initially surprising set of responses, top performers reported that their end-to-end O2C process is less standardized across geographies or product lines. Among top performers, 62 percent rated their O2C standardization at 0-25 percent when looking across geographic locations; 43 percent rated O2C standardization at 0-25 percent when looking across product lines. In contrast, 23 percent of other respondents rated their O2C standardization at 0-25 percent when looking across product lines. These responses point to the importance of strong underlying data quality and ownership. If the data is solid and automation is effective, then global process standardization becomes less vital. This circumstance has been referred to as “glocalization,” when there may be one global process, but the organization allows for local customization based on the reality on the ground in each location or for different product lines.



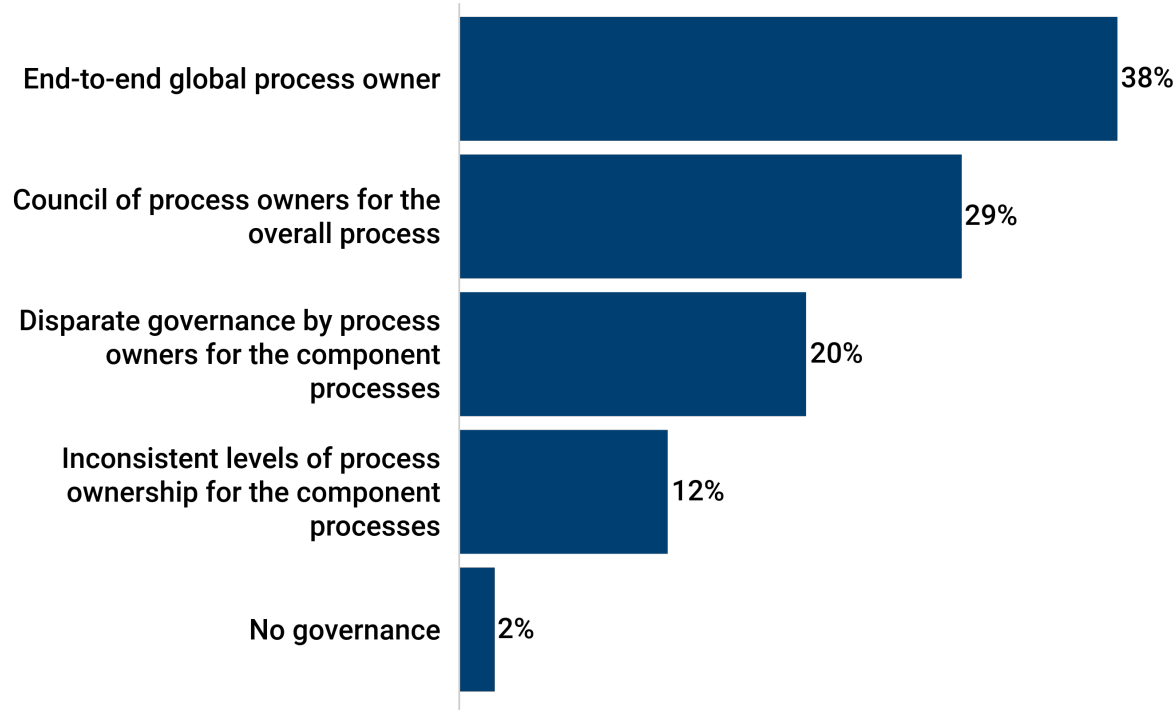


# PERFORMANCE DRIVERS

## ORDER-TO-CASH PROCESS GOVERNANCE

One of the largest drivers of top performers' success with O2C is process governance. Process governance encompasses all the structural elements that enable process management to work, including roles, accountability, oversight, sponsorship, and management. Figure 2 shows how respondents described their governance for the end-to-end O2C process.

Which of the following best describes your organization's governance for the end-to-end, O2C process?



(Figure 2 | N=177)

## ADOPT A GLOBAL PROCESS OWNER

Within process governance, an end-to-end global process owner is vital. A process owner, in general, is an individual who is accountable for change management, training, monitoring and control, and continuous improvement. Key responsibilities typically include:

- // defining the process, including roles, steps, and technology, as well as connections to other processes;
- // managing documentation, policies, and training;
- // setting performance targets;
- // monitoring and reporting on performance measures;
- // assessing and improving process maturity;
- // identifying risks, roadblocks, and improvement opportunities; and
- // working with the process management office and other key stakeholders to align process with strategy and implement improvements.

An end-to-end (E2E) global process owner is a single-point owner responsible for managing an E2E process across an enterprise. The role is typically held by a senior executive with strong business acumen, communication, and management skills. In addition to the usual process owner skillset, global process owners require:

- // in-depth organizational knowledge,
- // cross-functional facilitation and collaboration experience, and
- // expertise as a change agent.

Having an E2E global process owner in place for O2C has been proven to be very effective, yet fewer than 4 in 10 respondents follow this model.

Organizations that are committed to process excellence recognize that process governance roles require people with subject matter expertise, business acumen, and a passion for process. Mature process governance also means engaging busy leaders and executives in coordinating process work at the enterprise level to ensure a unified effort to drive the enterprise. This can often be a tall order, but without this buy-in work can become siloed and disjointed.

## END-TO-END PROCESS OWNERSHIP YIELDS IMPROVED RESULTS

GOVERNANCE MODEL	PERCENTAGE OF ORDERS DELIVERED ON-TIME IN-FULL (OTIF)		CYCLE TIME IN DAYS TO PERFORM THE O2C PROCESS	
	Median	N	Median	N
End-to-end global process owner	92%	62	50	63
Council of process owners for the overall process	91%	50	54	48
Disparate governance by process owners for component processes	91%	34	59	33
Inconsistent levels of process ownership for component processes	91%	17	58	16

(Figure 3)

Figure 3 shows that organizations with E2E process owners have a slight advantage on two key metrics.

- // **Orders delivered on time and in full (OTIF)**— Respondents with an E2E global process owner for O2C report a median of 92 percent OTIF. Other governance models have lower median OTIFs of 91 percent, and organizations with no governance report a median OTIF of just 79 percent.
- // **Cycle time**—Respondents with an E2E global process owner reported a median cycle time of 50 days to perform O2C processes. Other governance models have higher median O2C cycle times:
  - Council of process owners for the overall process: 54 days
  - Disparate governance by process owners for the component processes: 59 days
  - Inconsistent levels of process ownership for the component processes: 58 days
  - No governance: 60 days



## Case in Point

When the global enterprise **Corporación Multi Inversiones (CMI)** established end-to-end processes, it created E2E process teams for each E2E process. Every team includes a single process owner, business process leaders, and superusers. The process owner, who is designated by a CMI steering committee, provides oversight and management, and is ultimately accountable for their team's E2E process. Business process leaders represent each business unit associated with the team's E2E process, providing the process owner with guidance and direction. The E2E team's superusers are charged with documenting and sharing best practices for their processes, as well as helping to identify and implement process improvements. "Our superusers play an analyst or specialist role, while process owners and leaders provide the direction," explained Diego Alvarado, process optimization manager at CMI, during an interview with APQC. "We leverage the strengths of both groups to obtain the best results from our collaborative work at both ends."

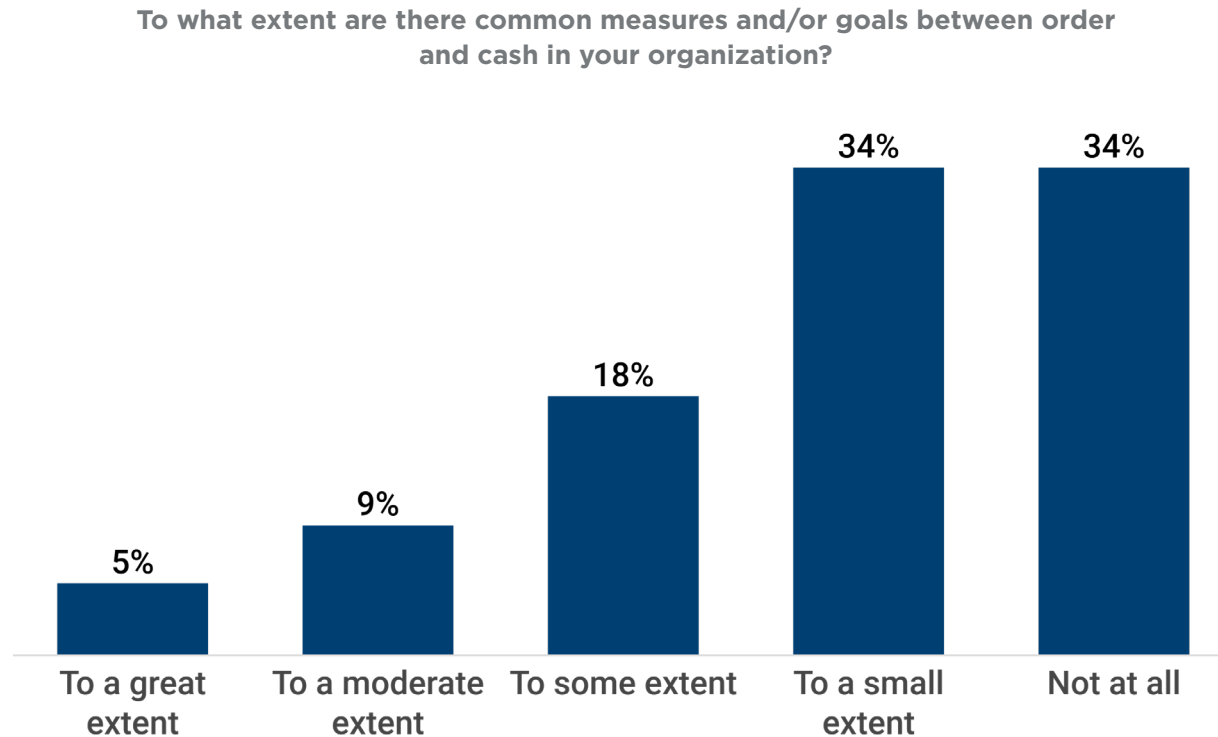


## BEWARE OF DISCONNECTED GOVERNANCE

One-third of respondents reported different ownership for various parts of the O2C process, as shown previously in Figure 2. This disconnected governance can lead to challenges, most notably misaligned measures and goals that ultimately lead to silos. Instead, when goals and measures are aligned across O2C, an organization can be sure everyone is moving in the same direction. The evidence becomes clear through KPIs, such as E2E O2C cycle time.

When a company establishes common goals such as E2E cycle time, departments or functions can focus on taking their performance to the next level in support of the common goal. Without common goals to drive a collaborative mindset, however, different functions within an enterprise might work against one another. For example, manufacturing might be measured on how successfully it meets internal dates, but those dates might not be consistent with the dates requested by the customer. Or order management might be measured on completeness of an order, but not on timeliness or how fast the order gets into the ERP system, or how soon a customer receives an acknowledgement of the order or a shipping date.

Despite the benefits of common goals, few respondents indicated they have implemented common goals between order and cash, as seen in Figure 4.



(Figure 4 | N=177)

## IMPROVE OVER TIME

Our research over the past two years indicates more organizations are adopting the process owner structure. Among respondents in our 2020 study, 34 percent reported disparate governance, while in 2021 only 20 percent reported disparate governance. Conversely, 29 percent of our 2020 respondents reported a global process owner versus 38 percent of our 2021 respondents – an increase of nearly 10 points.

This shift is not a result of change in strategic goals, which tend to address large-scale issues such as improving organizational agility, becoming customer-centric, or entering a new market. Instead, the shift in O2C process governance reflects a trend of organizations embracing an E2E process mindset.



## Case in Point

In the course of this research, we found several different models of O2C governance. We interviewed IBM executives about their successful Quote-to-Cash (Q2C) process transformation. They identified two sets of leaders for Q2C: transformation leadership and operations leadership. IBM's Q2C transformation team is responsible for developing and deploying strategic changes to the E2E process. The Q2C operations team members are geographically based and are responsible for executing the process as well as identifying and implementing tactical changes.

Prior to 2016, IBM managed separate, globally integrated support processes for opportunity-to-order (O2O) and O2C. IBM had optimized both processes, but as the organization's offerings evolved, the processes began to slow down because the handoff between them created problems with data, cycle times, talent, and the customer experience.

- // **Data:** Siloed data systems limited traceability, created dependencies and delays, and prevented the organization from fully integrating AI capabilities.
- // **Cycle times:** The pause between O2O and O2C increased overall cycle times.
- // **Talent:** The siloed structure limited employees' career growth opportunities and prevented the organization from fully leveraging their skills.
- // **Customer experience:** Customers built close relationships with bid support teams in the O2O stage of their journey but were then handed off to an entirely new team for O2C.

To resolve these issues, IBM merged the O2O and O2C teams. They formed a new integrated team with a common mission and a common vision: to improve the horizontal E2E process: quote-to-cash (Q2C).

In a different model, at Japan Tobacco International (JTI), there is not a single global process owner for O2C. Instead, the global process is managed by two functional champions working closely together: one in finance and the other from supply chain and customer service. JTI's orders come from internal and external customers, third-party vendors, and JTI markets and factories around the world. Supply chain and customer service owns the customer order, order fulfillment, and invoicing segments of the O2C process. The O2C finance team owns customer credit and cash collection.

# MASTER DATA MANAGEMENT FOR ORDER-TO-CASH

Another key driver for O2C is master data, which is the set of identifiers and extended attributes that describe the core entities of an enterprise including customers, prospects, citizens, suppliers, sites, hierarchies, and charts of accounts. Effective O2C hinges on master data that is high quality, consistent, and clean.

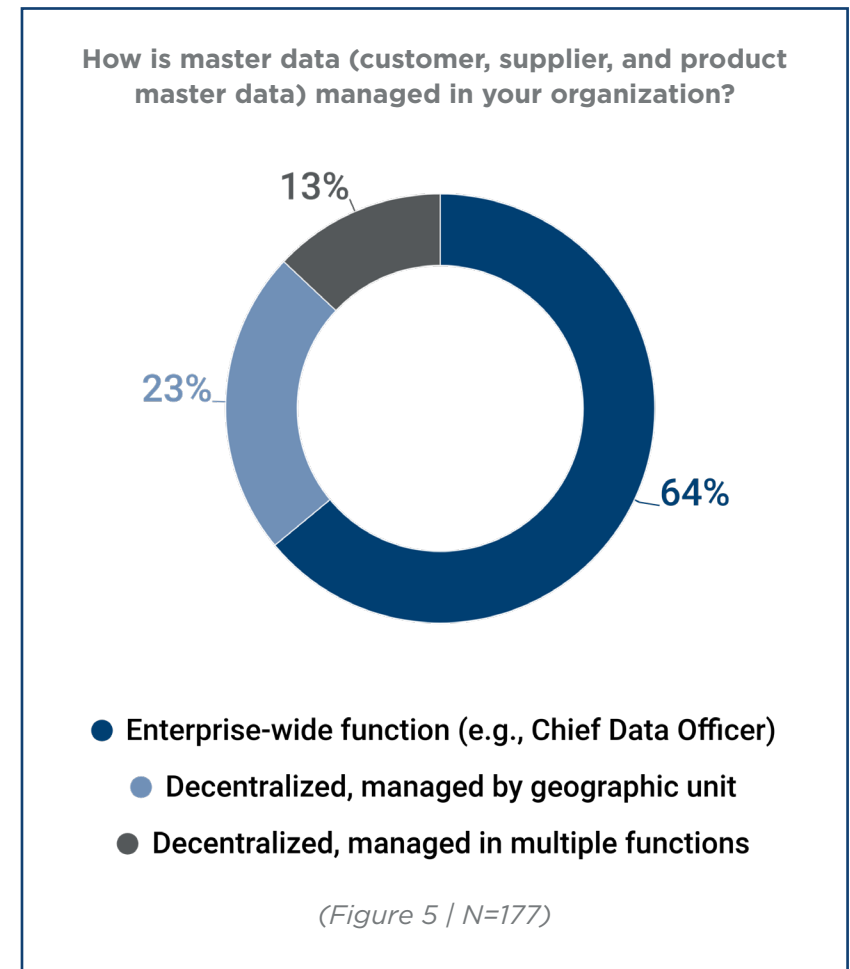
To that end, master data must be effectively managed. Top performers in our research engaged in defined master data management (MDM), a core process used to organize, categorize, synchronize, and enrich data records on customers, suppliers, and products across their enterprise. [Typically technology-enabled, MDM requires business and IT teams work together to ensure uniformity, accuracy, stewardship, semantic consistency, and accountability of the enterprise's official shared master data assets.](#)

## CENTRALIZE MASTER DATA OWNERSHIP

Someone once said master data is the “new oil” – an effective O2C process relies on high-quality data that flows seamlessly end-to-end, from sales to orders to invoicing. It is also true that effective MDM is not a “one and done” process, but an ongoing journey that is optimized by clear governance and attention. Our research bears that out, pointing to centralized ownership as a foundation for maintaining and leveraging strong master data.

Centralized MDM can enable more robust automation and ensure consistent, high-quality data across organizational silos. It enables a unified governance model with one set of rules and principles to be followed across the enterprise. This requires a consistent master data model. Data must be cleansed, trusted, and accessible across organizational silos. When asked how master data is managed (including customer, supplier, and product master data), nearly two-thirds of respondents report their organization uses an enterprise-wide function, such as a chief data officer (Figure 5).

However, nearly one-quarter of respondents report MDM that is decentralized and managed by geographic units. This approach can lead to inconsistencies in identifying global customers and suppliers. Nearly one in seven respondents reported that their MDM is functionally decentralized, a practice that can lead to disparate data governance models across functions, such as sales owning customer data and supply chain owning supplier data, setting the stage for inefficiency and error.



We also explored which functions within our respondents' organizations own MDM. Nearly two-thirds of respondents reported enterprise-wide master data ownership, which aligns to our earlier finding that MDM is most often an enterprise-wide function. Although MDM is often considered a business responsibility, half of respondents indicated that their IT team holds responsibility for some master data.

Centralized MDM responsibility is a best practice, as it enables comprehensive governance, processes, and metrics. With one enterprise-wide owner, there is clarity that "the data stops here." We found the following.

- // Participants whose MDM is owned by an enterprise-wide function such as a chief data officer reported a median of 36 days DSO and 92 percent OTIF. These metrics are better than those reported by respondents who do not have enterprise-wide MDM ownership (39 days DSO and 91 percent OTIF).
- // Participants with enterprise-wide master data ownership are nearly twice as likely to report having a global process owner for governance of the E2E O2C process, compared to respondents who do not have enterprise-wide MDM ownership.
- // Among survey respondents with customer data synchronized and flowing seamlessly among sales to order to invoicing systems, nearly three-quarters report enterprise-wide master data ownership such as a chief data officer.
- // The more advanced an organization is with automation, the more likely it is to have an enterprise-wide owner for MDM. Of those organizations using AI (the highest level of automation), more than three-quarters report centralized MDM ownership.

## CONNECT CUSTOMER MASTER DATA

Centralized enterprise-wide data ownership is only part of the formula for effective data management. High quality data is also critical. Yet many companies with centralized master data ownership have not solved the issue of data quality. A critical issue many companies wrestle with is identifying the data they need and where to find that information. The amount of data is important too. Most companies are drowning in data. While Big Data is a popular concept, sometimes what is needed is a targeted, small amount of data.

Only half of respondents report that customer master data flows seamlessly between different systems. The other half report issues with data not being consistent, effectively curated, or maintained. Clearly, there are significant opportunities to strengthen MDM by focusing on the flow and quality of data.

## IMPROVE QUALITY AND MANAGEMENT

Respondents clearly recognize the importance of master data. When asked, "What are the next improvements you expect to implement for your order-to-cash process?", the top response, given by over half of respondents, was to "improve the quality and management of the master data." Since data is the foundation of a strong O2C process, this focus makes sense. This response was most common among organizations that also reported decentralization, unsynchronized data, or struggles with data flow.

What benefits do organizations expect from improving the quality and management of master data? Respondents anticipate reduced costs and an enhanced ability to take advantage of advanced analytics.





## Case in Point

In our [interview with IBM](#) about their Q2C transformation, executives highlighted an upfront effort to improve master data as a critical success factor. IBM's Q2C transformation, enabled by master data improvements, has yielded significant benefits in terms of improved cash flow, productivity, cycle time, ROI, and seller satisfaction.

Some of the steps taken by IBM to improve MDM include:

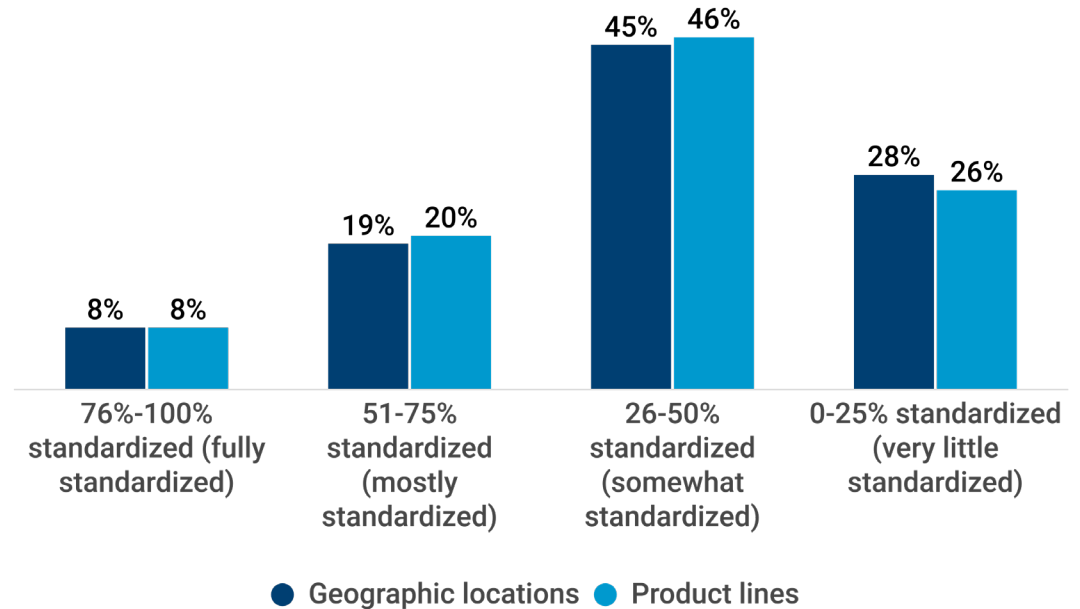
- // Naming a chief data officer responsible for MDM
- // Establishing a customer hierarchy approach that standardized the master record of each customer, incorporating more granular data as the customer moves through the ordering process
- // Creating an enterprise taxonomy that allows for standardized product master data
- // Ensuring data flows into a standardized, enterprise-wide data repository so that data resides in one place rather than multiple legacy systems
- // Investing in teams of data architects and roles such as a chief analytics officer that enable the enterprise focus on data

## O2C PROCESS STANDARDIZATION

How important is it for end-to-end processes like O2C to be standardized across an enterprise, whether by product line or by geographic location? It seems intuitive that standardizing a process would shrink the cycle time, which is important to customers.

The E2E O2C process crosses multiple functions inside an enterprise, including sales, order management, supply chain, and finance. A standardized E2E O2C process can eliminate inefficiencies, reduce errors, and improve cycle time. However, it is typical for organizations to have various processes, tools, and procedures that have evolved over time to meet the distinct needs of geographic locations or product lines. In fact, fewer than one-third of our respondents said their E2E O2C process is fully or mostly standardized, and the responses are similar whether looking across geographic locations or product lines (see Figure 6).

How standardized is the end-to-end order-to-cash process across the following categories?

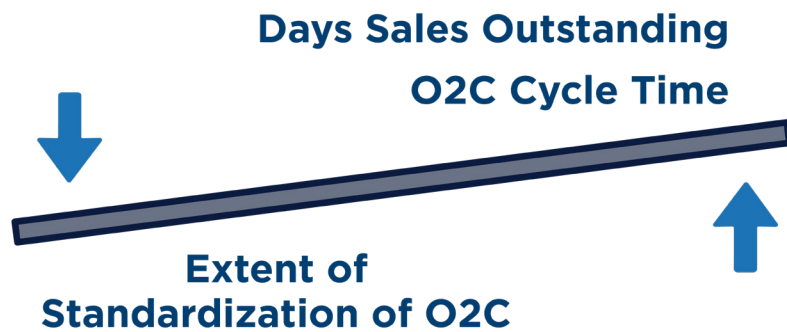


(Figure 6 | N=177)

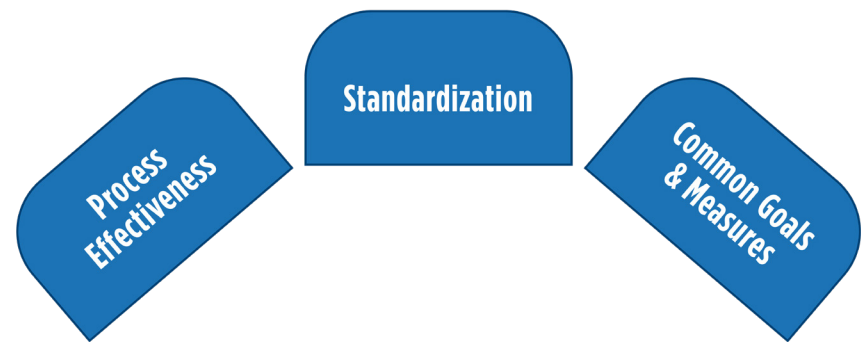
## STRIVE FOR GREATER STANDARDIZATION

In digging into the research, we find several areas where greater process standardization is associated with better metrics or outcomes. The degree of standardization of the E2E O2C process across geographies is positively correlated to improved DSO and O2C cycle time (Figure 7). Participants with a fully standardized O2C process across geographic locations reported a DSO of 32 days, compared to a DSO of 40 days for the respondents with the least standardized O2C process across geographic locations. The fully standardized respondents also reported a 29-day O2C cycle time, which is half of the 58-day cycle time reported by those with the least standardization.

Increased standardization of the O2C process correlates with a positive view on process effectiveness. The correlation is echoed when we look at standardization across product lines or geographic locations. Of the respondents reporting their O2C process was “very or somewhat effective,” nearly two-thirds said their O2C process was fully or mostly standardized (Figure 8).



(Figure 7)



(Figure 8)

The more standardized the E2E O2C process is, the more likely the organization is to have common measures or goals between order and cash. The responses were similar whether the standardization was by product line or by geographic location. Of the respondents who reported that their O2C process is fully or mostly standardized, over two-thirds reported their organization had common measures or goals between order and cash to at least some extent.

It is clear from our research that increasing the level of standardization across the O2C process yields benefits in terms of improved DSO, cycle time, effectiveness, and efficiency.



## Case in Point

Many organizations undertake transformations to improve the standardization of their O2C process across the enterprise, with expected improvements in terms of reduced cost, increased cycle times, faster cash collection, and better overall process effectiveness.

As an example, we revisit our interview with O2C leaders at Japan Tobacco International (JTI), who brought their diverse O2C processes together under one management structure to enable cost reductions and process improvements. Looking across their geographic markets, the newly consolidated O2C team at JTI identified immediate standardization opportunities. It was clear that certain markets operated more efficiently than others. Their team discovered that the less efficient markets had processes that were redundant or otherwise unnecessary. The JTI team also found that technology assets such as their ERP system and other tools had features and capabilities that were not being consistently utilized in the less efficient markets. JTI carried that finding through its O2C transformation, emphasizing standardization and consistency across its markets.



# ORDER-TO-CASH AUTOMATION

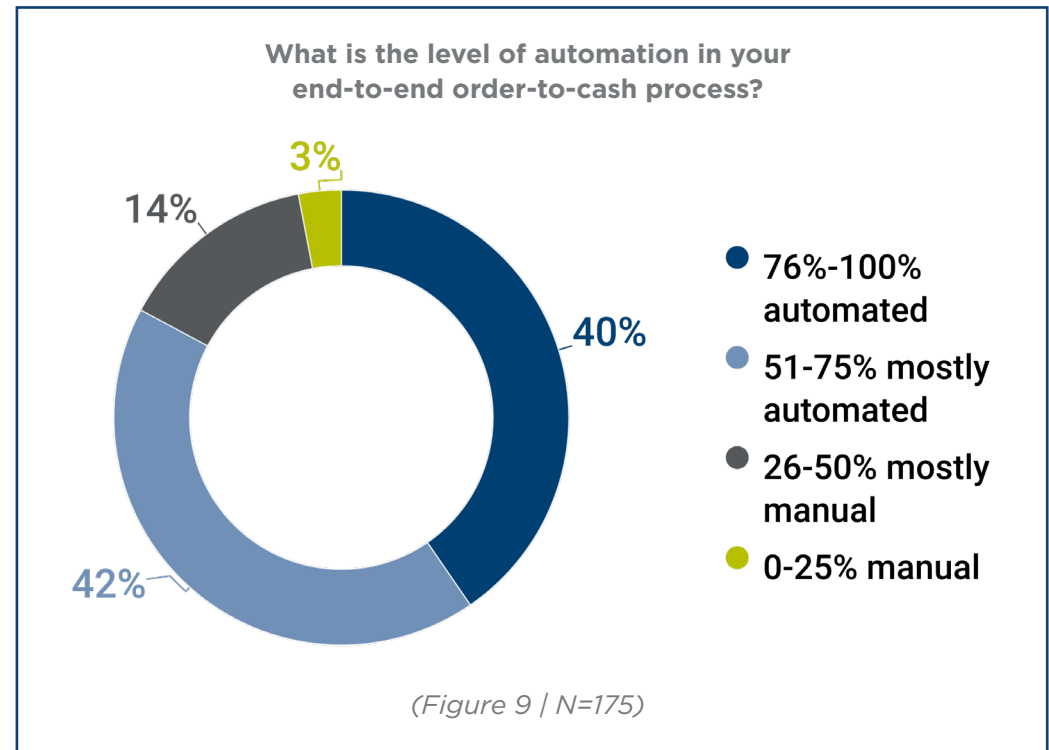
It is largely held that an important step to reduce errors and improve the O2C process is to decrease manual activities through automation, particularly activities that cross different functions. More than 80 percent of our respondents identified their E2E O2C process as “mostly or fully automated” (Figure 9). Interestingly, this reveals a disconnect. Throughout our research, most respondents have hinted at struggles within their O2C processes. For example, you will recall that fewer than half of respondents report seamlessly connected master data across systems. How is that the case when a vast majority of respondents’ O2C is automated? We suspect the disconnect could mean companies began by automating what is easy, and they are missing the benefits of higher-level automation and higher quality synchronized data such as seamless order handover, advanced analytics, and cross-sell and upsell automations.

## EMBRACE AUTOMATION

What can we learn from the respondents who report their E2E O2C process is fully (75-100 percent) automated? Across this highly automated group, one-half reports that they have a global O2C process owner, and three-quarters report their MDM is owned by an enterprise-wide master data function such as a chief data officer. Thus, higher automation is closely correlated to enterprise-level ownership of both the O2C process and MDM.

Those with a fully automated O2C process more commonly use machine learning for sales CPQ, order management, and invoicing. Respondents with slightly less automated O2C processes report using robotic process automation (RPA) most often for sales CPQ and order management processes.

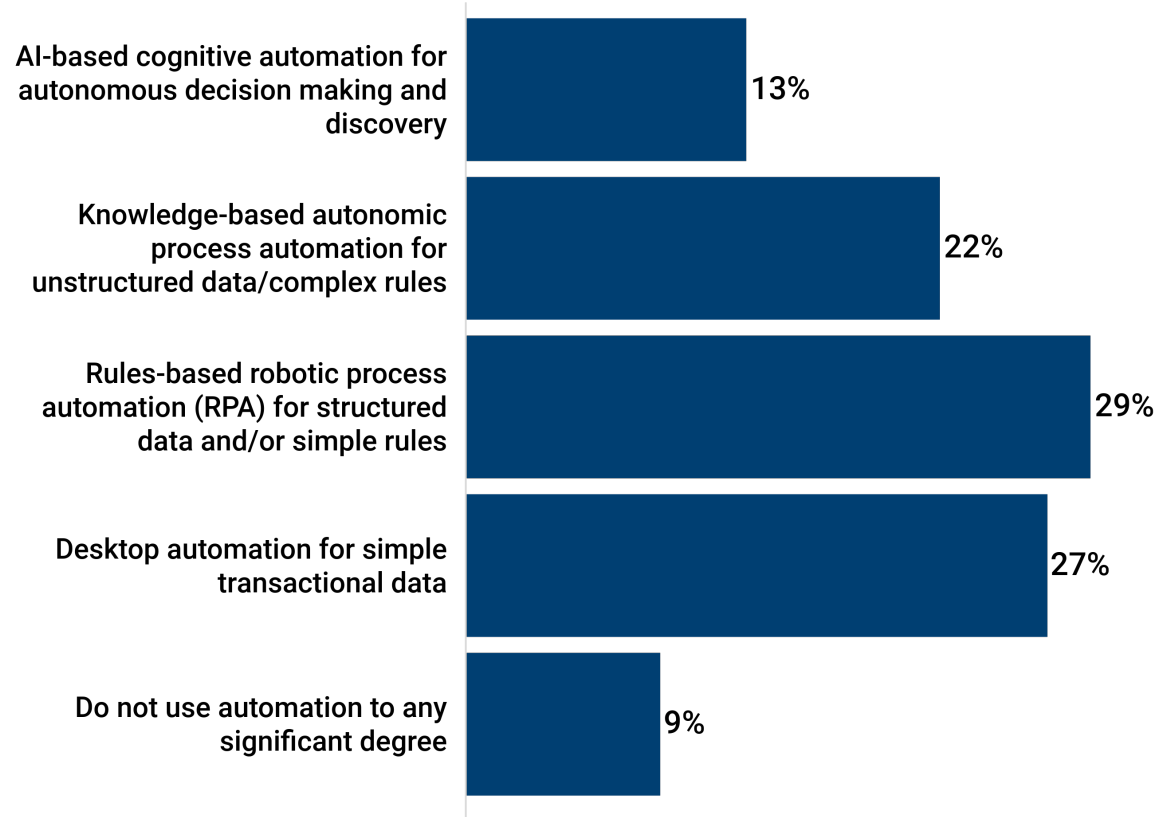
Not surprisingly, the vast majority of the respondents who report the lowest level of O2C automation also report their orders are more likely to be entered manually by sales, an administrator, or order management personnel, hampering efficiencies and creating opportunities for error.



## MOVE UP THE AUTOMATION MATURITY SCALE

*Automation* can mean many things, so we wanted to better understand actual usage of specific automation tools inside organizations today for O2C. We asked respondents about the highest levels of automation used in their organization's O2C, ranging from no automation, to simple desktop automations, to RPA, to ML, and finally AI as shown in Figure 10.

Which of the following best describes your organization's use of process automation within your order-to-cash (O2C) process?



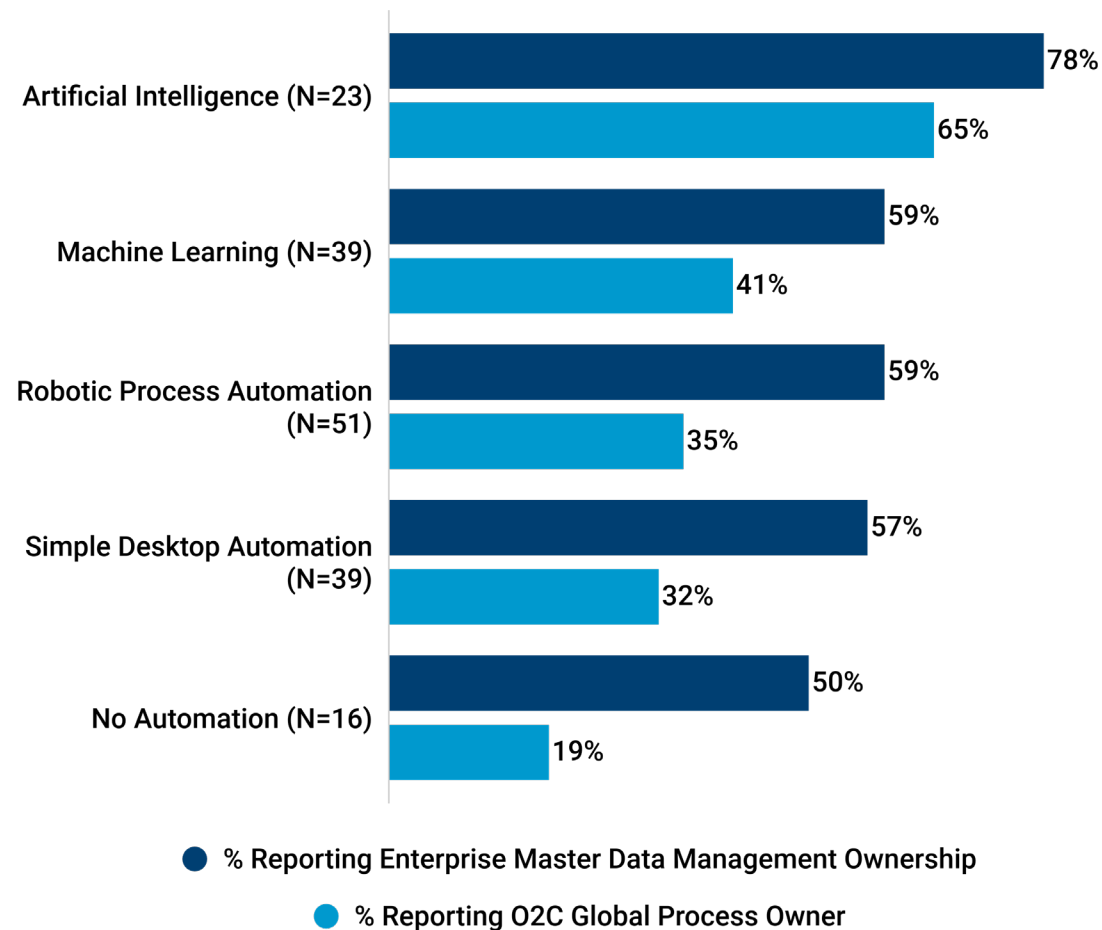
(Figure 10 | N=176)

More than one-third of respondents use simple or no automations at all in their O2C process. This is surprising given the expectations of today's customers for a rapid and seamless buying experience, and the availability of these process automation tools. Other organizations are increasing automations to get to higher value, with one-third of respondents moving to RPA. The final one-third of participants are using either ML or AI.

In our view, usage of ML and AI is becoming a competitive differentiator in the O2C process, as these automation tools enable efficiency, speed, and higher-quality analytics. We encourage organizations to start on their automation journey for O2C or risk being left behind in this era of change and disruption.

There is a clear trend to be seen in the research, that the more advanced an organization is with automation, the more likely it is to have both a global process owner for O2C and an enterprise-wide owner for MDM as shown in Figure 11. We consider these to be best practices—it is logical that more centralized O2C process governance and master data ownership facilitate (and help get funding) for increased thoughtful automation of the end-to-end O2C process.

**Relationship Between Automation, MDM Ownership, and Global Process Owners**



(Figure 11)

## EMPLOY ROBOTIC PROCESS AUTOMATION AND MACHINE LEARNING

Consider the whole picture of potential benefits when deciding which automations to use in which parts of the O2C process. Respondents tend to prioritize order management and sales CPQ processes when it comes to RPA and ML automations. Regrettably, RPA and ML are least used in invoicing and cash collection despite significant benefits that could result, for example, from predicting which invoices might be problematic and by automating invoice reminders through smart RPAs.

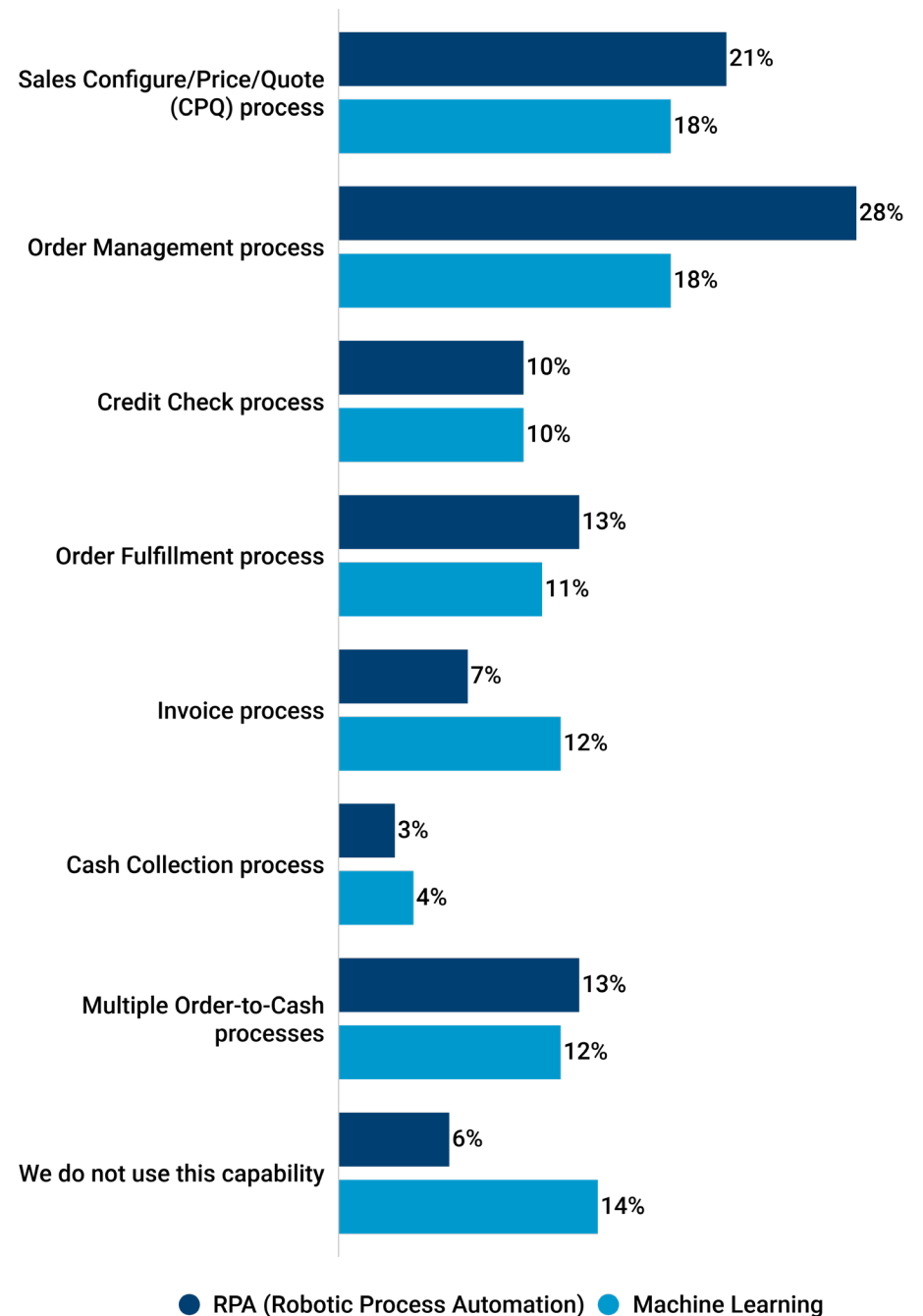
Of course, the million-dollar question: do more advanced automations lead to improved outcomes? We found this to be the case when comparing metrics for respondents that use Machine Learning for multiple O2C processes to respondents that do not use ML at all. We found ML users have a lower median DSO (34.5 vs. 36 days) and a better median OTIF (92 percent vs. 90 percent) than those respondents that do not use ML (Figure 12).

### Case in Point



And what about AI, used by 13 percent of respondents? Is it indeed the “Holy Grail” of automation? Again, we point to **IBM’s Q2C process transformation**. Theresa Dirker, Vice President of Quote-to-Cash Transformation at IBM, suggested they found AI helpful when it was part of the experience, rather than a tool that employees had to use separately. Theresa said, “AI gives information and capability to the practitioner to do their own work, but it must be part of the normal experience of their workflow.” She highlighted that RPA has been effective in saving employees time by automating manual tasks, but Intelligent workflows, which incorporate AI, save even more time by empowering employees to make faster decisions and handle tasks without tradeoffs.

Parts of the O2C Process Using RPA and Machine Learning



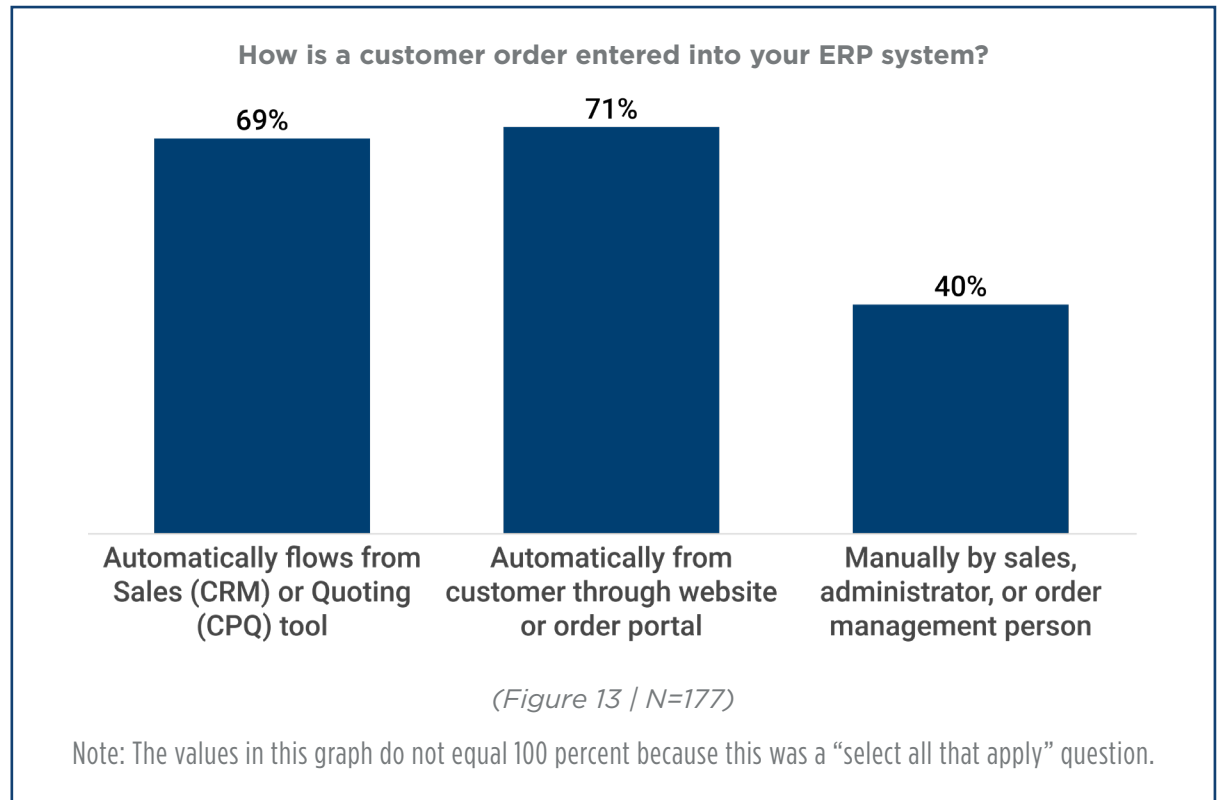
(Figure 12 | N=160)

## STREAMLINE ORDER ENTRY BY AUTOMATING SYSTEM LINKAGES

We explored how organizations streamline the transmission of customer orders from receipt to manufacturing, asking how a customer order was entered into the respondent's ERP system. Over two-thirds of respondents reported that the order automatically flows from the sales (CRM) or quoting (CPQ) tool (Figure 13).

Manual order entry, however, remains a reality for 40 percent of respondents, which is surprising considering growing customer expectations for transactional speed and transparency and even self-service. Indeed, today's customers have different expectations and requirements. They want more customization, products and services delivered faster, and a pleasant experience. As respondents had an option to select all that apply on this question, some may be switching between automated and manual processes depending on the order type.

But does it matter if orders are automatic or entered manually? As expected, we found better outcomes and metrics with a more automated order process. Respondents who selected "Orders automatically flow from sales (CRM) or quoting (CPQ) tool to the ERP system," have the following characteristics and performance levels.



- // DSO was better at 35.5 days compared to 40 days DSO for those whose orders do not automatically flow.
- // OTIF was better at 92 percent vs. 90.5 percent.
- // Nearly 70 percent of this group had enterprise-wide master data management, compared to less than 40 percent.

Organizations understand change is necessary—nearly half of respondents who said their orders are entered manually aim to embed real-time visibility to orders and shipments in the future.



# ORDER VISIBILITY

We know that today’s customers expect the same visibility and transparency in their business-to-business (B2B) transactions as they experience in their personal transactions. They want to know when to expect an order, and if a shipment has been delayed. Within an organization, it is important for sellers and others who interact with customers to be armed with the very latest information on the status of an order and expected ship dates. Thus, visibility into orders, both internally and externally, is critical in today’s business world.

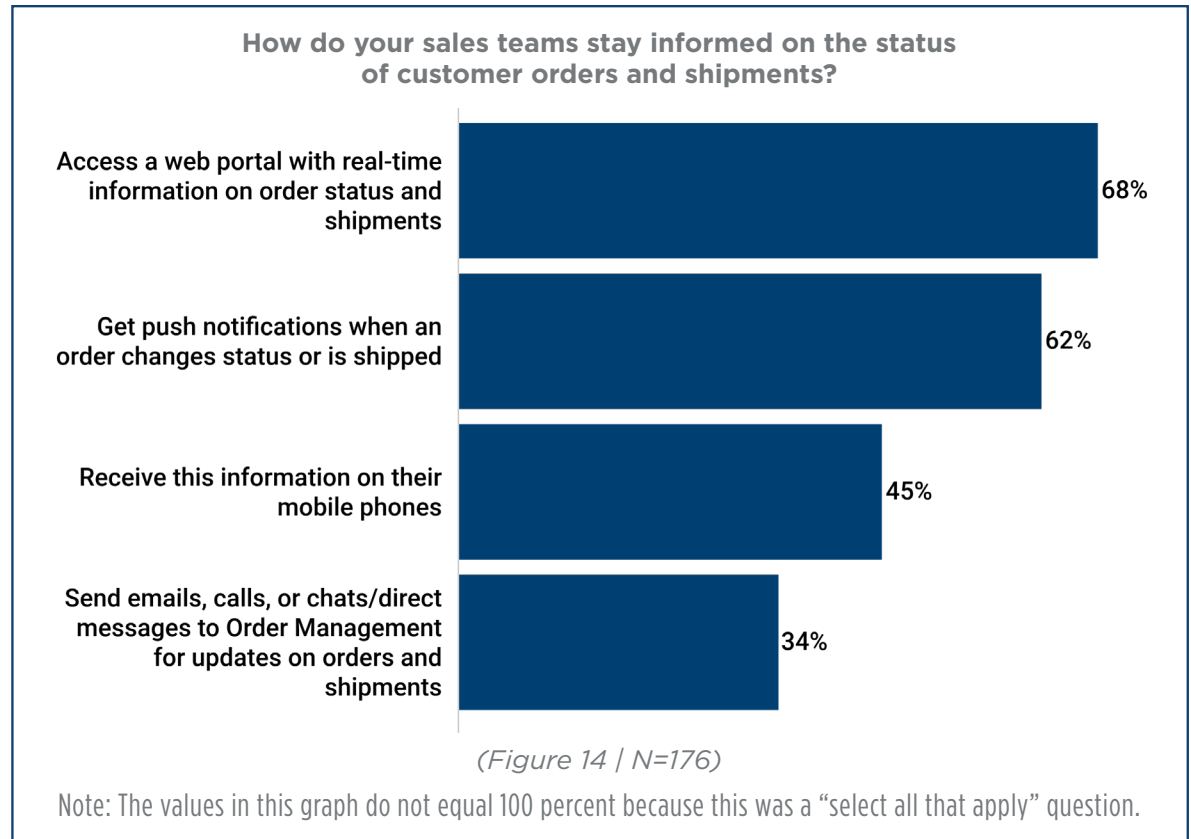
We wanted to understand specifically what is happening with visibility in organizations. We gathered insights into how sales teams and customers remain informed about the status of orders and shipments.

## ENABLE SALES VISIBILITY INTO ORDER STATUS

More than two-thirds of respondents reported that their sales teams can view the status of orders, either through a web portal, push notifications, or both (Figure 14). However, one-third of organizations must access order information manually, which means sales and support staff can become bogged down in back-and-forth communication.

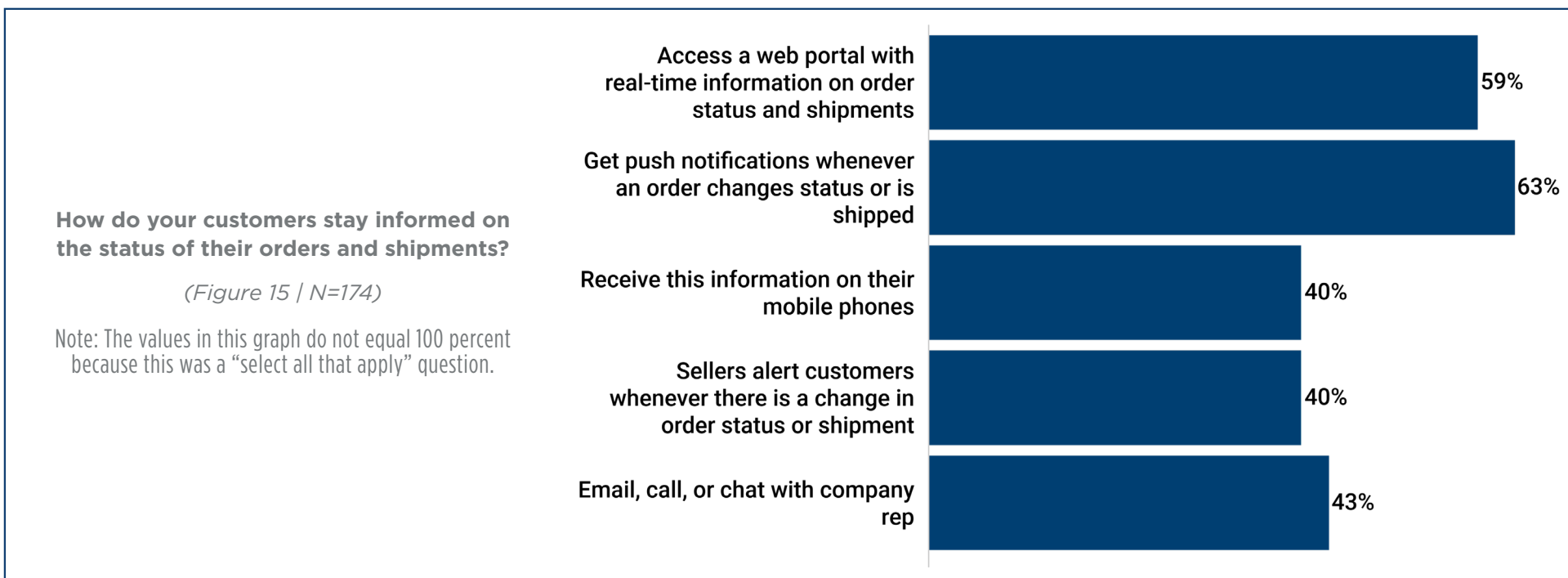
Does better internal transparency lead to better outcomes? In our research, yes. For respondents who selected, “Our sales team members access a web portal with real-time information on order status and shipments,” median end-to-end O2C cycle time was 52 days, compared to 55 days for those respondents without this capability. This increased visibility enables greater accountability and can highlight—and thus reduce—potential bottlenecks.

When sales team members have anytime, anywhere access to the status of customer orders, they can resolve issues quickly. The end-to-end O2C cycle time is particularly strong when team members can access order information on their mobile phones (51 days for those who use phones vs. 58 days for those who do not). Of course, it is more than just the sales teams. Digitally connecting and giving visibility to all the O2C functions, including manufacturing, logistics, and finance, will improve responsiveness, accuracy, and speed.



## GIVE CUSTOMERS VISIBILITY INTO ORDER STATUS

Customers also want direct visibility into their orders, consistent with their online consumer transactions. Nearly two-thirds of the respondents' organizations enable their customers with information on order status through web portals, push notifications, or both (Figure 15). This percentage is lower than for internal visibility, which makes sense as organizations often begin the visibility process by making the order status visible internally to sales, and only extend that visibility to customers once the process and tools are proven.



As expected, we see better outcomes among organizations that offer more customer visibility into orders. Respondents offering visibility for customers through a web portal or push notifications had better median DSO (34 vs 39 days) and better median end-to-end O2C cycle time (52 days vs. 58 days) compared to those respondents who lack this capability.

Increased transparency and order visibility for customers ensures accountability and can draw attention to bottlenecks in the process. Also, increased customer visibility brings customers into a closer partnership, ideally resulting in fewer issues with invoicing and payment. A customer-present O2C process with end-to-end visibility across the enterprise will better anticipate customer desires, in addition to providing increased transparency for customers.

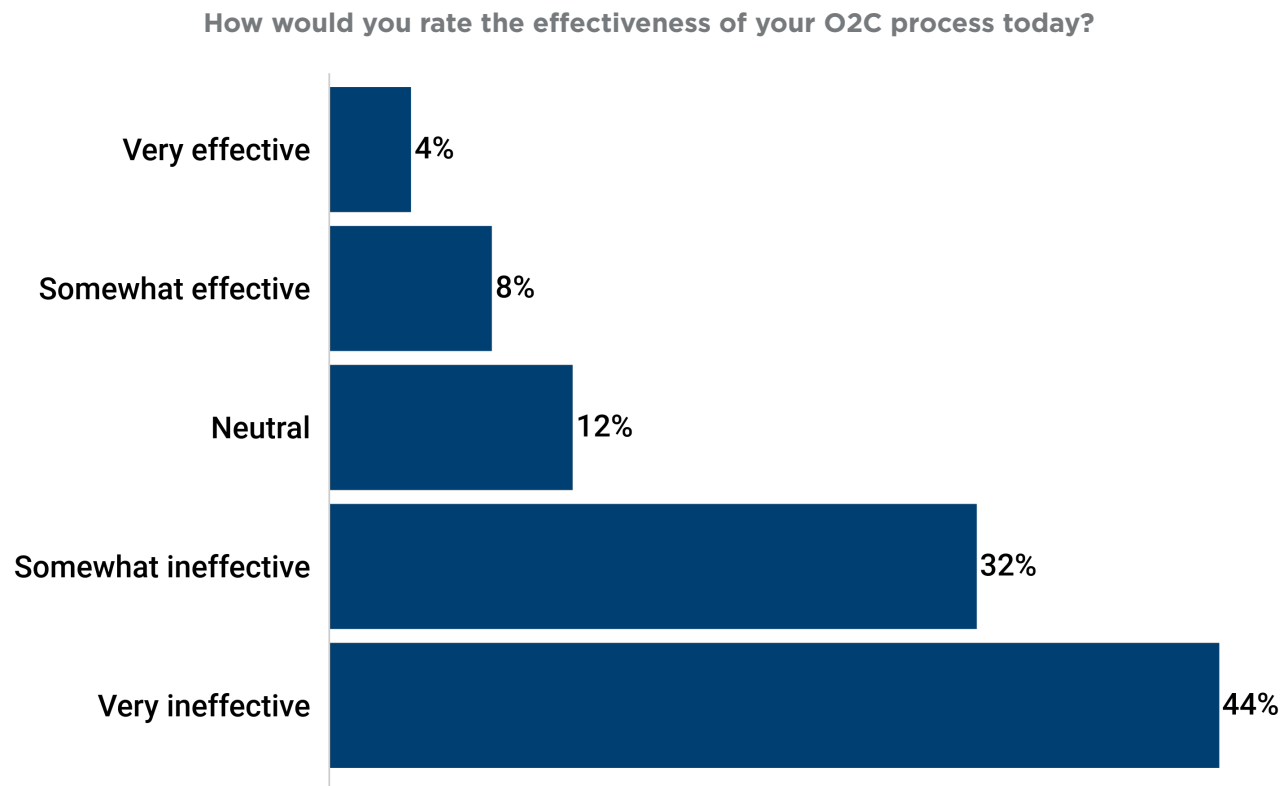
To summarize, two-thirds of respondents have the capability for customers and internal sales teams to view the latest status of orders and shipments in a real time, automated way. We believe this sort of transparency is rapidly becoming an expectation in the business world. Organizations that do not have this order visibility capability, or who handle it manually, run the risk of obsolescence.

# ADDITIONAL CONSIDERATIONS AND FUTURE PLANS

In conducting this examination of the O2C process, we were aware of two contextual factors that impacted the data. The first, an external factor that disrupted organizations around the world: the COVID-19 global pandemic. We conducted our research after a full year of the pandemic, and the collected data reflected that reality. The second factor is the impact of organizational size, in terms of annual revenue, on the O2C process.

## IMPACT OF COVID-19 GLOBAL PANDEMIC

One of the first indications that the pandemic has impacted the O2C process is evident in respondents' ratings of satisfaction with their process (Figure 16).



(Figure 16 | N=177)

Only 4 percent of respondents feel their organization's O2C process is very effective. This surprising data on effectiveness (or lack thereof) speaks to the challenges of end-to-end processes in general and the impact of the COVID-19 pandemic on order-to-cash specifically. Multiple disruptions have made it harder to fulfill orders in a timely manner, reducing perceived effectiveness of this E2E process.

In comparing this O2C data to data collected prior to the pandemic from a different set of organizations, we see that several measures and practices have changed. And while OTIF may have improved, the O2C cycle time is longer. In other words, orders may be arriving on time, but the expectation for what constitutes an on-time delivery has changed to accommodate the disruptions from the pandemic. In looking at cycle time, in this newest research, the median O2C cycle time is 54 days, whereas pre-pandemic research in 2020 had a median of 30 days, and APQC's Open Standards Benchmarking® repository has 35 days as the median for O2C cycle time. We anticipate that some pandemic-related disruptions are not permanent and expect that O2C cycle times will decrease in coming years.

The pandemic had a notable impact on automation and on supply chains. With a shift to remote work, organizations were forced to quickly automate and adopt newer, more sophisticated technologies. The digital transformation of the O2C process, including supply chain functions, is no longer a nice to have. It is a business imperative. Organizations today have a more mature O2C process, with the mix of RPA, ML, and AI increasing by 10 points.

We have also seen an increase in the existence of a global process owner for O2C (38 percent in this research vs 29 percent pre-pandemic). The shift may be due to organizations' increased need for greater control over O2C during times of disruption. A global process owner, as noted earlier in this report, is effective in coordinating unified process work at the enterprise level, ensuring work doesn't become siloed and disjointed.

Lastly, in addition to process changes, the pandemic drove a change in leadership styles in many organizations. With less in-person contact, leaders and team members were forced to improve their communication and coordination remotely. But leaders also had to be more intentional with their team members on a personal level. Genuine and thoughtful connections, while challenging in a remote environment, became even more critical for maintaining employee engagement.



# Case in Point

Like all organizations, **IBM** was forced to quickly pivot in response to COVID-19. The shift revealed strengths and gaps in its Quote-to-Cash (Q2C) change management processes. Q2C employees adapted quickly. IBM reports that within Q2C, the transition to remote work was, for the most part, seamless. However, motivation and engagement became a struggle. Communication was key to keeping employees engaged and leading them through change. Since COVID-19, Q2C leaders have taken a more formal and proactive approach to staying connected with their teams. “Motivating them and learning how to have fun online was the hard thing to do, not the actual processing of the work,” said Theresa Dirker, Vice President of Quote-to-Cash Transformation. “It shouldn’t have taken a pandemic to do that [checking in with employees more], but there’s more humanness in the way we work now than before the pandemic,” added Joan Nelson, Vice President of Quote-to-Cash Operations, North America / Latin America.

**JTI** found that the processes that became their greatest struggle in the midst of pandemic shutdowns were hiring, onboarding, and training, all of which had to be done remotely on a global scale.

**JTI’s O2C** team, which was in the midst of transitioning work to its global business services center, was challenged with completing that transition remotely. They found that the task required more skill, effort, and time. The teams leading the transformation had to be agile and adaptive. And importantly, they had to create strong bonds with a “one team” mindset, built upon transparency and accountability. Honest, collaborative relationships were critical.

“This was quite a journey, it was new for everyone, and everyone needed to adapt,” said Stephane Lambelet, GBS Global Supply Chain and Customer Service Functional Champion. “You had to think about how best to collaborate in a remote environment.”



# IMPACT OF ORGANIZATION SIZE

We noted interesting differences in O2C when analyzing organizations based on size. Our team sorted respondents according to the following annual organizational revenue groups:

- // Small: Less than \$1 billion in revenue
- // Medium: \$1 billion to \$10 billion in revenue
- // Large: More than \$10 billion in revenue

We found that size has its advantages in terms of resources and capacity for transformation.

- // Nearly one-half of large organizations report having a global process owner, compared to only one-third of small and medium respondents.
- // Nearly three-quarters of large organizations utilize an enterprise-wide master data owner such as a chief data officer. That falls to nearly two-thirds of medium organizations and slightly over half of small organizations.

Large organizations are much further along the automation journey than their smaller counterparts:

- // Over half of large organizations use AI and ML, compared to only one-third of medium organizations and one-quarter of small organizations.
- // Large organizations are more likely to use RPA and ML for multiple O2C processes.
- // Nearly all large organizations reported automatic flows of data from sales or customers into their ERP systems.

The proof is in the outcomes. Large organizations have better cycle time and DSO metrics than their small and medium counterparts: a median O2C cycle time of 49 days vs. 58-60 days for small and medium organizations; and a median DSO of 34 days vs. 46 days for small organizations.

Surprisingly, despite their advantages and successful metrics, large organizations report O2C processes that are less standardized than small and medium organizations. Over one-third of small organizations say they are 50-100 percent standardized, compared to only one in seven large organizations. Certainly, a large organization's size can mean increased complexity, but it does not appear that is the reason for less standardization. Instead, it appears large organizations are using automation and centralization of governance not to ensure enterprise-wide standardization, but to ensure flexibility in standardization along different geographies or product lines. We saw this with top performers, where strong data quality and process ownership allow for more local customization.

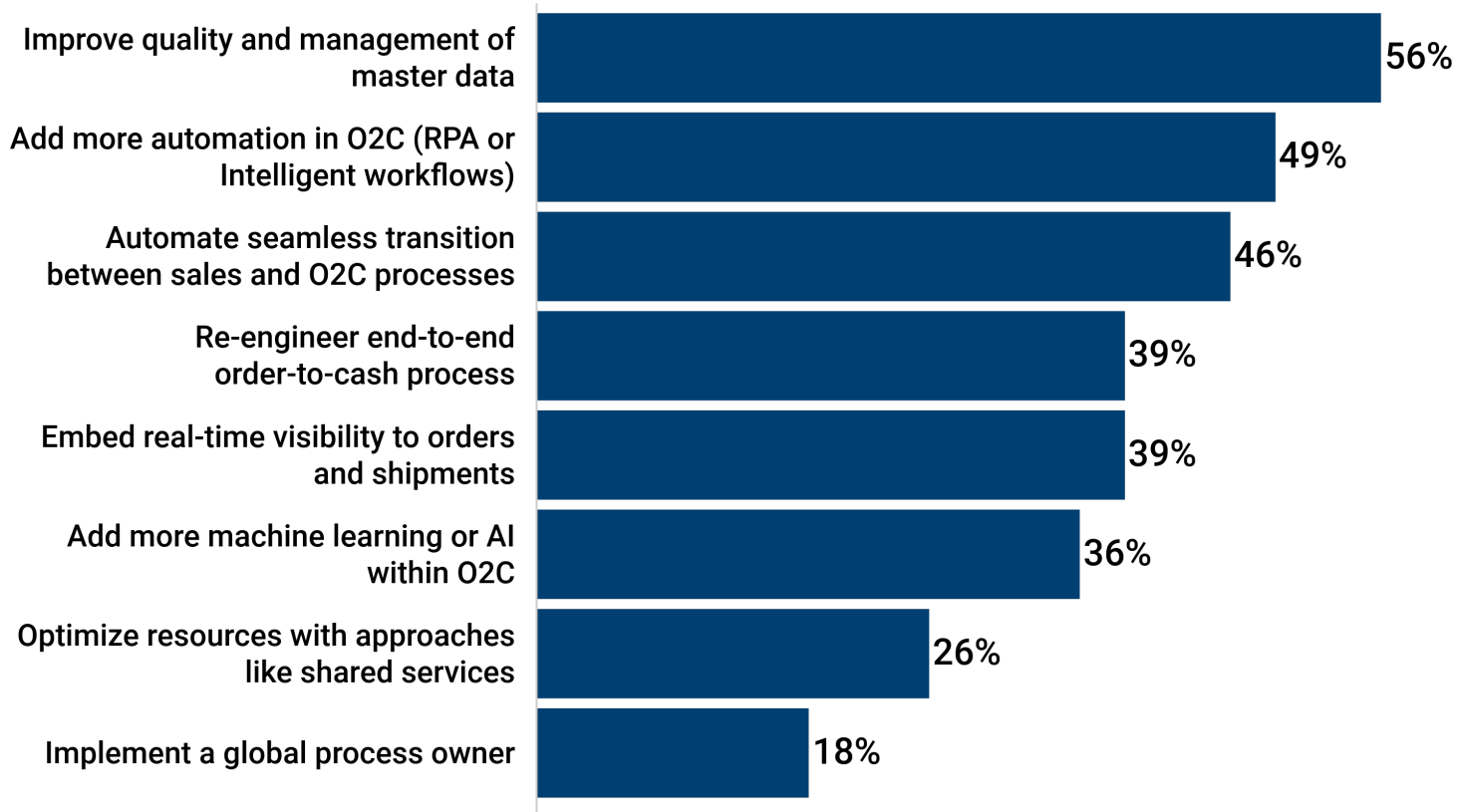
Notably, large organizations are pursuing a wider spectrum of ideas for improvement than smaller and medium organizations, possibly reflecting their larger budget to spend. They are focused on better master data, advanced analytics, and customer satisfaction.

# FUTURE PLANS

Looking to the future, respondents are focused on improving the quality and management of the underlying data for O2C first. Since data is the foundation of a strong process, this is an essential improvement step.

It is interesting to note that improving governance is last on the list for those without a global process owner already in place (Figure 17). Fixing data and adding automation are helpful, but consistent process ownership is the key to long-term, ongoing success.

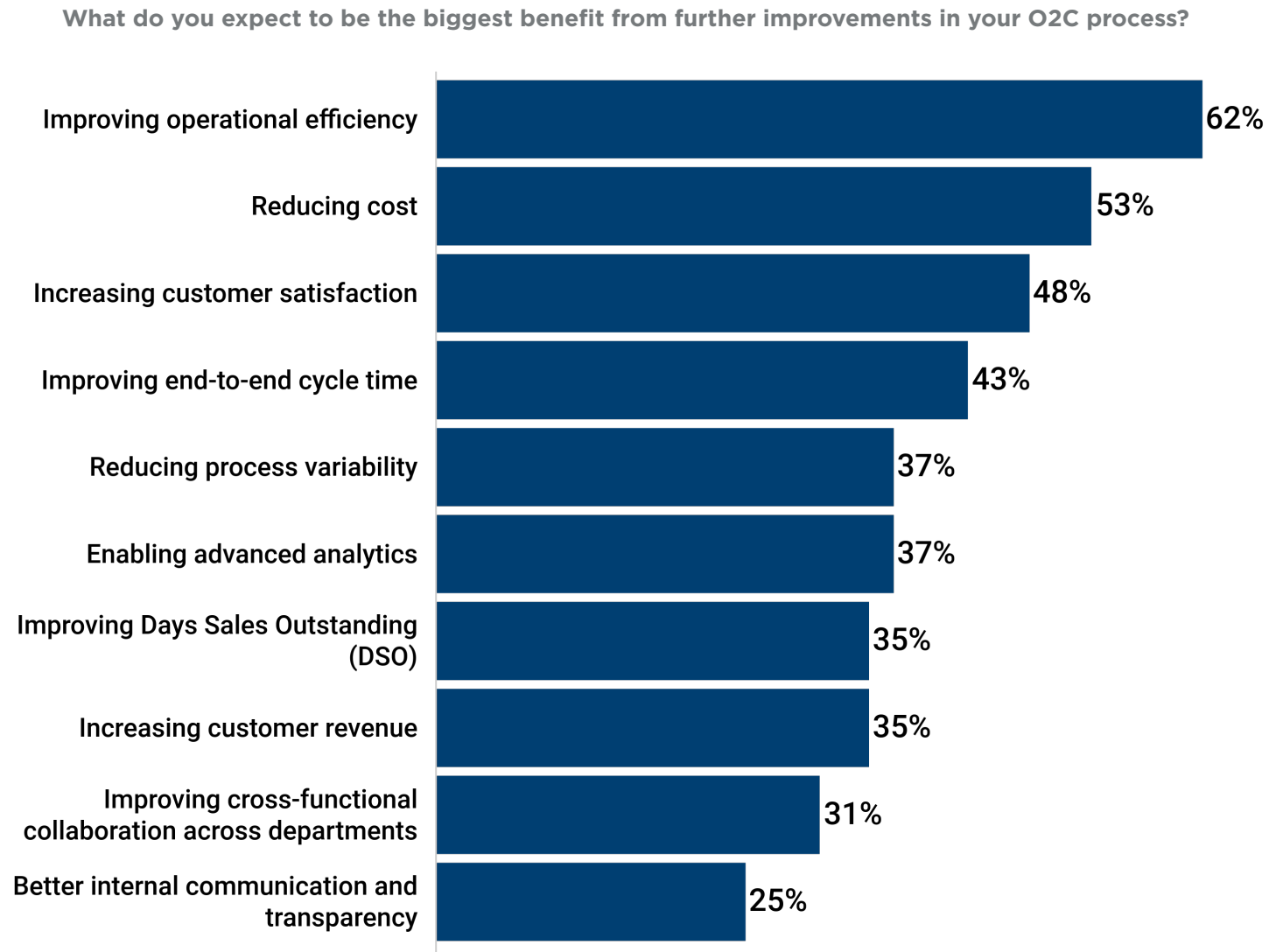
What are the next improvements you expect to implement for your order-to-cash process?



(Figure 17 | N=174)

Note: The values in this graph do not equal 100 percent because this was a “select all that apply” question.

The biggest benefit respondents expect from improved O2C is improved efficiency (Figure 18). Given the low ratings for the current effectiveness of their processes, there is a need for improved efficiency in terms of both speed and quality. Surprisingly, customer satisfaction ranks third, perhaps a reflection of the impact of the pandemic, shifting the focus more inward toward survival and cost reduction.



(Figure 18 | N=175)

Note: The values in this graph do not equal 100 percent because this was a “select all that apply” question.



# CONCLUDING THOUGHTS

What are the key takeaways from this order-to-cash research? APQC and DSCI believe an organization's responsiveness is only as good as its O2C process. Today's customers have higher expectations of speed and transparency in their business transactions, and it is O2C that drives much of the internal response to these heightened customer expectations.

To up their game in O2C, we recommend organizations embrace the following proven practices.

- // Ensure high quality master data, which is foundational for an effective O2C process.
- // Increase automation beginning with RPA and moving to ML and AI.
- // Centralize end-to-end process ownership.
- // Standardize the order-to-cash process.
- // Establish common goals and measurements for all stakeholders.
- // Enable order visibility and transparency for sellers and customers.

In the face of a global pandemic, many organizations have demonstrated a resiliency and a capacity for accelerated transformation that they perhaps would not have thought possible. This is the new speed of transformation.

# BACKGROUND

## ABOUT THIS RESEARCH

APQC and DSCI gathered data and insights through global research conducted in late 2021 to early 2022 through surveys, interviews, and case studies with O2C professionals. The authors also referenced APQC benchmarking metrics, prior APQC survey results, and thought leadership from both APQC and DSCI.

The 2021 order-to-cash survey included 177 valid global respondents, primarily representing B2B organizations from 12 different industries. Nearly all respondents (96 percent) are from organizations with revenues greater than \$500 million USD. Most respondents were a manager/process owner/specialist (41 percent), director/senior manager (22 percent) or CEO/senior executive (38 percent) for their organization. They work in typical O2C functions including finance, accounts receivable, order management, customer service, supply chain and corporate headquarters.

Participants were balanced across the globe, with 30 percent each coming from US and Canada, Asia Pacific, and Europe/Middle East/Africa. The remaining 10 percent were from Central and South America.

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*To see all the data collected, [click here to access Order-to-Cash: Managing for Success in Disruptive Times Survey Report](#).*

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# ABOUT APQC

APQC helps organizations work smarter, faster, and with greater confidence. It is the world's foremost authority in benchmarking, best practices, process and performance improvement, and knowledge management. APQC's unique structure as a member-based nonprofit makes it a differentiator in the marketplace. APQC partners with more than 500 member organizations worldwide in all industries. With more than 40 years of experience, APQC remains the world's leader in transforming organizations. Visit us at [www.apqc.org](http://www.apqc.org), and learn how you can make best practices your practices.

# ABOUT DSCI

The Digital Supply Chain Institute (DSCI) is a leading-edge research institute focused on the evolution of enterprise supply chains in the digital economy and the creation and application of supply chain management best practices. DSCI is a research arm of the non-profit Center for Global Enterprise. Visit us at <https://www.dscinstitute.org/> to learn more about our research and services we offer DSCI members.



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