

Streamline SAP S/4HANA Migrations by Overcoming Custom Code Challenges

The transition to SAP S/4HANA is accelerating, with many organizations facing significant challenges, such as managing extensive custom code, ensuring clear documentation, and accurately scoping projects. Research by ASUG and smartShift highlights that successful migrations require time, organization-wide efforts, and effective strategies. Leveraging smartShift can help address these challenges by optimizing custom code, providing insight into clean core modernization, and ensuring a smoother, more efficient migration process.

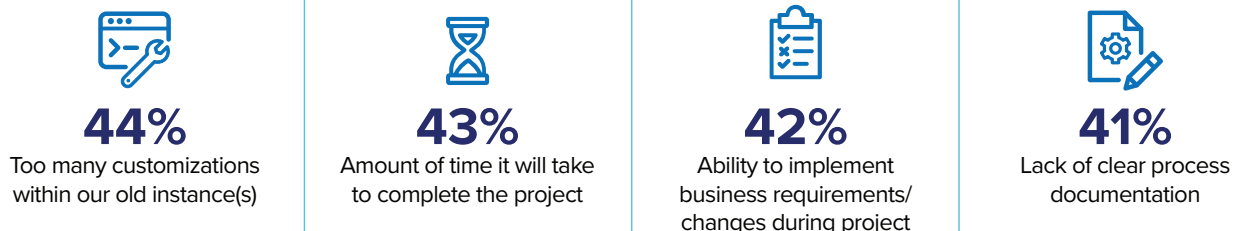
SAP S/4HANA Status and Challenges

The move to SAP S/4HANA is accelerating; watch out for speed bumps ahead.

The transition to SAP S/4HANA is well underway, with 42% of respondents having fully or partially completed their migration. Additionally, 57% are planning their transition. Previous ASUG research indicates that SAP customers are driven to migrate primarily due to the impending end of mainstream maintenance in 2027. Furthermore, the enhanced functionality and performance of S/4HANA contribute to increased productivity and process standardization, thereby improving consistency, quality, and predictability.

Every major technology upgrade has both tremendous potential—and genuine risks and challenges. According to ASUG Research, the top SAP S/4HANA migration challenges experienced include customizations within old instances, lack of clear process documentation, amount of time it will take to complete the project, and support needed while diverting the team from their primary responsibilities.

Figure 1: Top SAP S/4HANA migration challenges experienced



Source: ASUG SAP S/4HANA Journeys: Voice of the ASUG Member research, May 2024

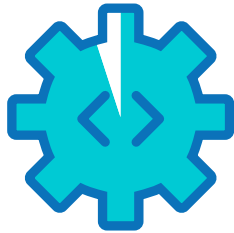


Read how smartShift helped an organization identify and remove unused custom code.

Custom code is a business necessity with increasing reliance and challenges.

Despite the challenges custom code imposes in a digital transformation, nearly all SAP customers use custom code to run their core business processes. And, the need for custom code has increased in 2024 according to research from ASUG and smartShift.

Figure 2: Organizations build and run custom code

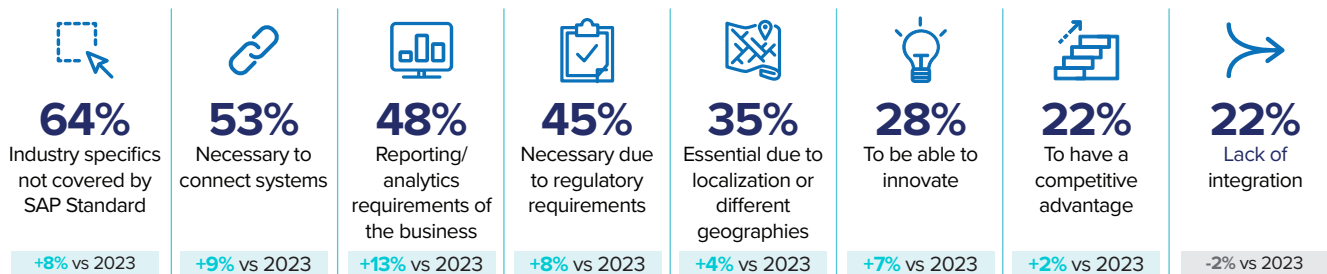


95%
of organizations build
and run custom code

Among respondents who build and run custom code, 79% use it to run up to half of their organization's core/essential business processes. The top reason why organizations need custom code is due to unique industry specifics not being covered by standard SAP functionality, followed by the need to connect to external systems, reporting/analytics requirements, and regulatory requirements.

Source: ASUG/smartShift research, February 2024

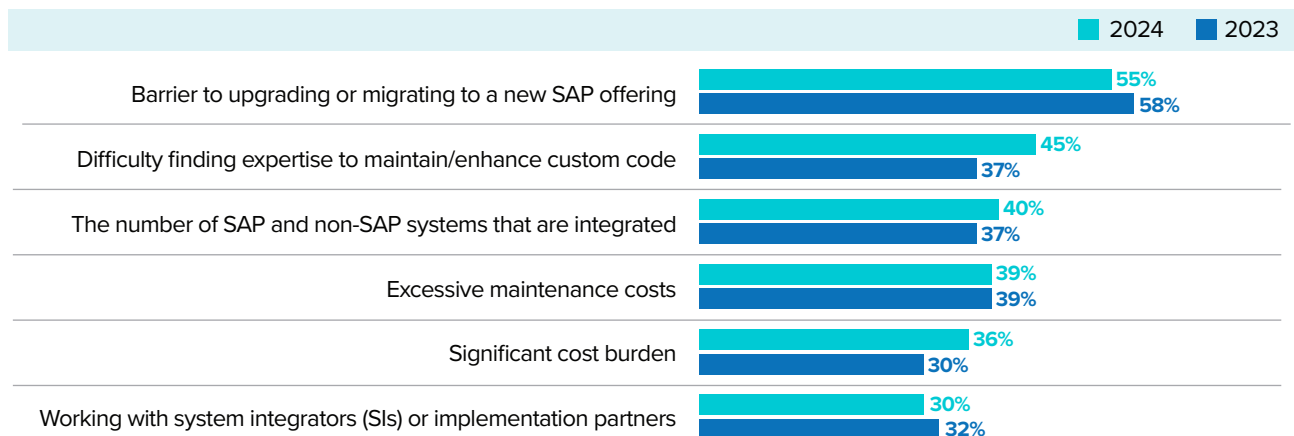
Figure 3: Reasons organizations need custom code



Source: ASUG/smartShift research, February 2024

As the need for customization rises, so too have the challenges it brings. Consistent with ASUG/smartShift 2023 research, the top challenge custom code presents to organizations is the impact it has on upgrading or migrating to a new SAP version. With many organizations needing to manage their custom code ahead of their digital transformations, resource and skill shortages and the significant cost burden have risen over time.

Figure 4: Challenges custom code presents to organizations



Source: ASUG/smartShift research, February 2024 (2024) and November 2022 (2023)

While custom code poses a lot of challenges, the majority of organizations are building and running custom code to extend SAP software applications, therefore many SAP customers can't just walk away from their custom code. Custom code is not a luxury; it is integral to the effective functioning of organizations' processes. Companies can leverage smartShift to manage the custom code transformation workstream to streamline digital transformations, ensuring custom code is optimized, modernized, and secure.



Learn more about why organizations rely on custom code.

The Role of Custom Code

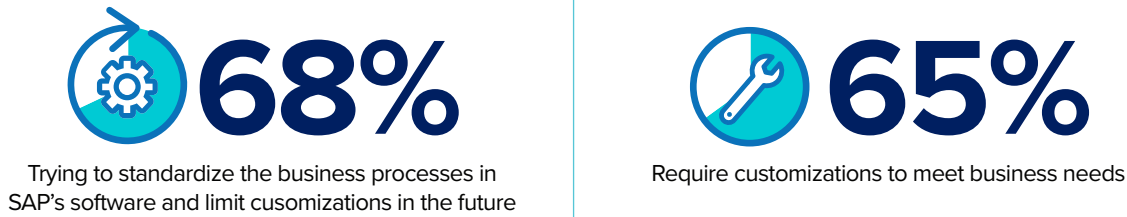
Balancing clean core ideals amid custom code demands.

ASUG and smartShift research highlights the challenges organizations face in balancing custom code requirements with “clean core” best practices. Navigating these priorities requires careful support, and smartShift provides solutions to help organizations achieve this balance effectively.

As organizations progress in their SAP S/4HANA journeys, limiting customization is recognized as a best practice. The reality, however, is business requirements will always outpace the availability of standard SAP functionality.

Limiting custom code is the goal, but the role it plays in SAP S/4HANA migrations and its usage is undeniable.

Figure 5: Role of custom code as organization moves forward with SAP S/4HANA



Source: ASUG/smartShift research, February 2024

Plans to continue using custom code amidst SAP S/4HANA migrations outweigh moves to modern extensibility concepts. Therefore, as organizations move forward with SAP S/4HANA, the bulk of respondents will continue to use custom code but to a smaller extent.

Figure 6: How organization's custom code handled in SAP S/4HANA migrations

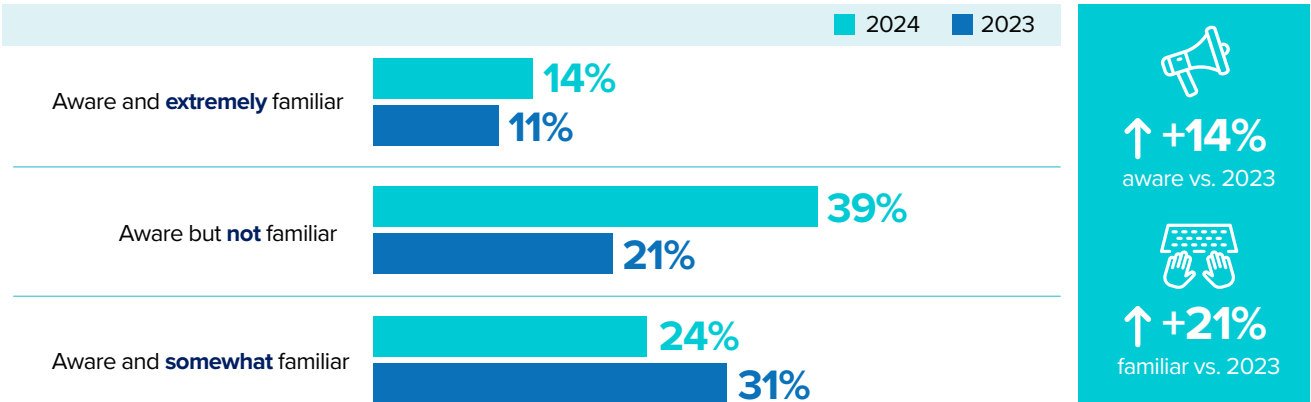


Source: ASUG/smartShift research, February 2024

The importance of “clean core” is apparent, yet customers need help optimizing.

ASUG and smartShift’s research identified an increasing familiarity with clean core. In 2023, 21% of SAP customers had heard of clean core, compared to today where 53% of ASUG members express familiarity with the concept.

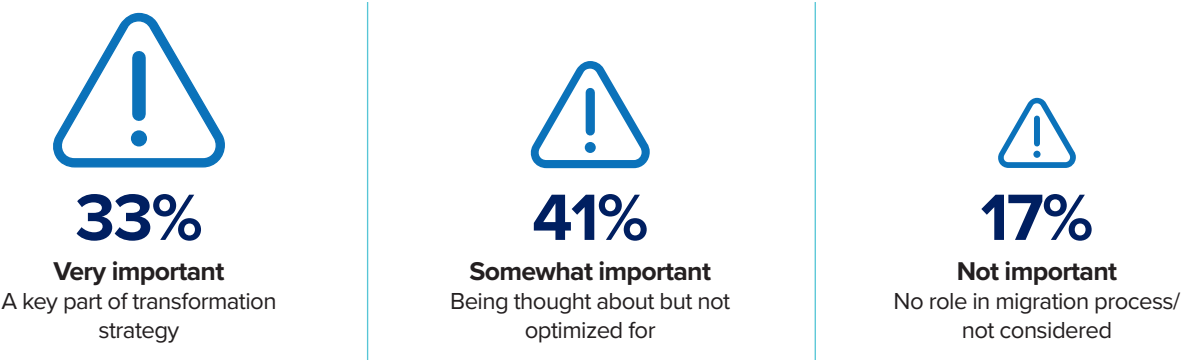
Figure 7: Awareness and familiarity with the clean core concept



Though a clean core is not seen as an absolute. Among respondents who are aware of the clean core concept, the majority perceive it to allow customizations alongside a standard instance. Approximately half (52%) agree that clean core encompasses running a standard instance with a minimum of custom code running alongside standard software, while 30% define clean core as more rigid— with no modifications or customizations.

The notable rise in familiarity does align with the importance of clean core to organizations’ SAP S/4HANA migration process. One third (33%) note it is very important or a key part of their organization’s transformation strategy, 41% note it is somewhat important, but not thought about or optimized for, and lastly 17% noted clean core is not important and did not play a role in organization’s SAP S/4HANA migration process.

Figure 8: Importance of “clean core” to organizations’ SAP S/4HANA migration process



Source: ASUG/smartShift research, February 2024



Find the right balance between custom code and clean core for successful SAP S/4HANA migrations

Migrating custom code is a complex and resource-intensive process.

Though numerous challenges surface in this complex process, working with the right people and ensuring the organization understands the complexity of migrations is key to managing expectations.

When migrating custom code as part of S/4HANA modernization, the need for extensive testing, lack of proper documentation, and underestimating scope are the top challenges.

Rigorous regression testing is a requirement when upgrading to S/4HANA to ensure a reliable post-migration environment. One survey respondent told ASUG that extensive testing can impact organizations' people as "testing took our key workers away from their other duties for extensive times."

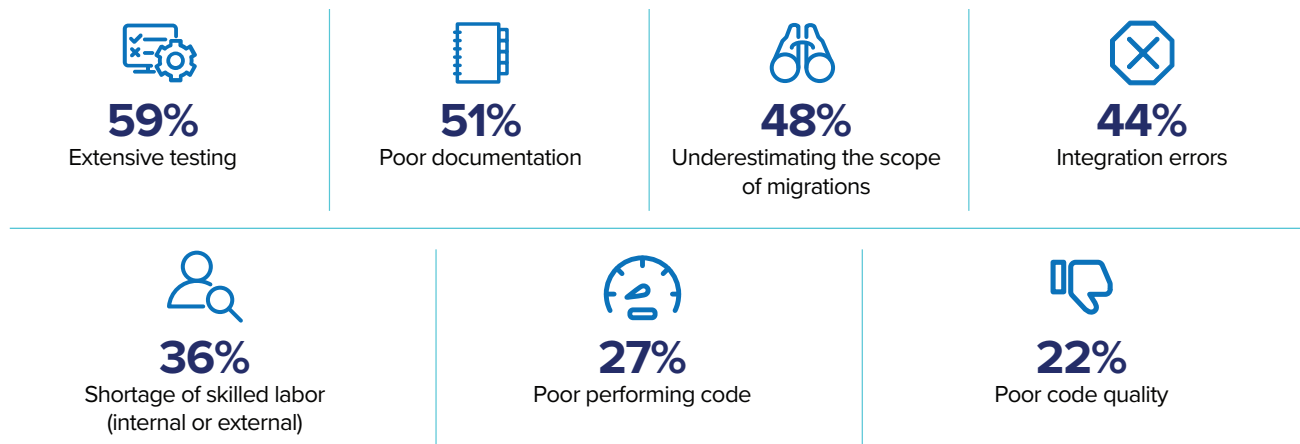
Having clear documentation is also crucial; it helps developers understand existing systems and processes during migration. Another survey respondent notes the challenges their organization faces due to poor documentation, "Legacy codes [have been] running for 20 years, the current team doesn't know what happens inside the hood anymore due to lack of documentation of code as well as requirements."

Properly understanding the full scope of migration tasks prevents surprises and ensures timely completion. As one respondent noted, "The amount of work analyzing the code and then remediating it was severely underestimated. This needs hundreds or thousands of hours worth of work."

Another challenge to watch for: poor code quality and poor-performing code don't always receive immediate attention, but they can gradually escalate into more significant problems than initially anticipated.

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Figure 9: Top challenges when migrating custom code to SAP S/4HANA



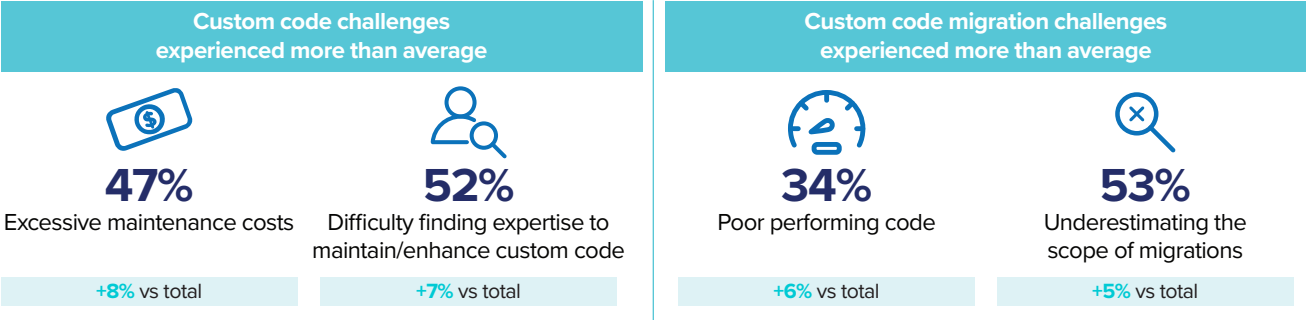
Source: ASUG/smartShift research, February 2024

When SIs are turned to, customers are facing more challenges in managing and migrating custom code.

Organizations that rely on SIs (System Integrators) to primarily manage their SAP S/4HANA migrations, are more likely to experience custom code challenges than average, according to research from ASUG and smartShift. And the extra time required for knowledge transfer and code review frustrates customers using SIs.

Customers relying on SIs for custom code migrations face heightened challenges with excessive maintenance costs, poor code performance, and difficulties in finding code expertise and defining migration scopes. Gaps in institutional/industry knowledge relevant to customers’ businesses extend timelines further.

Figure 10: Top challenges with custom code and when migrating custom code to SAP S/4HANA by respondents who rely on SIs



Source: ASUG/smartShift research, February 2024

It is crucial for customers to understand that substantial investments in time, resources, and money with SIs does not guarantee success, as the lack of code optimization post-migration remains a significant issue. As one respondent puts it, “SI is motivated to get work done quickly. As a result, code generated is functional, but opportunities exist for optimization, simplification and performance tuning.”

Automation presents an effective solution to migration challenges, helping to reduce the time and resources needed, and thus enhancing speed and accuracy. Solutions that address vulnerabilities and ensure SAP S/4HANA compatibility are particularly in demand, as highlighted by ASUG and smartShift research.



Better understand the challenges SAP customers are facing.

Unlocking Success in Custom Code Migration

ASUG and smartShift research underscores the critical need for detailed strategies in migrating custom code to SAP S/4HANA. SAP customers emphasize that successful custom code migrations require substantial time, a coordinated effort across the entire organization, and the expertise of partners like smartShift.

Not all organizations have a detailed strategy in place for migrating their custom code to SAP S/4HANA. The research discovered an equal split between respondents belonging to organizations with strategies (38%) and those who are unsure or unaware (40%) if their organization has a detailed strategy in place.

More information is needed on the strategies behind migrations.

Figure 11: Status of organizations detailed strategies for migrating custom code to SAP S/4HANA



Source: ASUG/smartShift research, February 2024

For those employing a strategy, the key elements include thoroughly reviewing custom code, optimizing tools, and focusing on internal upskilling. One respondent described the main aspects of their strategy as, “Our plan is to review all custom code and remove any unused code prior to migrating. For used code - follow SAP recommendations to make compatible with S/4.” Another respondent more simply stated that they are “leveraging smartShift” for their custom code migration strategy.

ASUG Members who migrated or will be migrating their custom code to SAP S/4HANA were eager to share recommendations to make the path forward easier for others. Universally respondents highly stressed the amount of time it takes to communicate the necessity of reducing custom code, reviewing and documenting all processes, engaging with the right people, and accurately defining scope.

SAP customers are clear in their advice: successful migrations demand time and organization-wide efforts.

Recommendations for custom code migrations

1 Reduce custom code and stick to standard



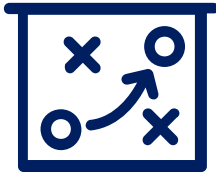
The top piece of advice from ASUG members is to push your organization to reduce custom code and stick to standard SAP functionality wherever possible. One SAP customer’s advice is to “Challenge custom requirements, processes, etc., reduce as much custom now vs. waiting for a project to handle it, seek out industry best practices, manage the changes iteratively vs. in big bang approaches. Work with SAP to get the needed API’s, CDS views, BADI’s, and SAP partners to ensure S/4 compliance.”

2 Take time to review



The second recommendation from ASUG members is to take time to review custom code, analyze and document all processes, and ensure you have comprehensive testing strategy in place before migration. A survey participant who is migrating custom code in their SAP S/4HANA system said, “Make absolutely sure you need the code when moving forward. Migrating old code to S/4 is a rather large challenge, and if you migrate unneeded code, you’ve increased your footprint for no reason, and it’s a lot of wasted effort.”

3 Plan early and have a strategy



The third recommendation is to plan early and have a strategy that ensures a long project runway by not underestimating the project scope. One specific piece of feedback suggests not to “underestimate the body of work to update your code to a level that can be accepted in S/4. Additionally, put a plan together to move the code out of the core. This will take place over a period of time (years).”

4 Work with the right people/skillsets



And the last piece of advice: work with the right people. Specifically, one respondent says to “obtain an experienced system integrator who has performed other S/4 migrations and knows what to look for. Inventory all [third]-party add-ins in your current ECC systems and determine what other software migrations/upgrades are required to be S/4 compliant”. And another says more aptly “use automation tools and services where possible to remediate code (smartShift).”



Watch this ASUG and smartShift webcast on how you can successfully migrate your custom code.



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smartShift offers a better way for SAP customers to migrate and optimize their custom code. With its patented AI-powered solutions, smartShift delivers secure, stable, and optimized code in weeks rather than the months required by conventional approaches. smartShift is trusted by many of the world’s largest SAP customers and has been used to modernize over 3,000 SAP systems, converting over 2.5 billion lines of code. smartShift offers a fixed price, fixed timeline solution with a 100% quality guarantee.

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