Resulting it

Fifty Shades of Blue

The secrets to taking control of your S/4HANA journey

The move to S/4HANA can be a challenging one.

To be successful, you need to take advice from people who can simplify, innovate and automate moving to S/4HANA.

Having seen Resulting IT in action and knowing some of the experts and innovators who have contributed to this guide, it's a must-read for people who are starting out on their S/4HANA journey.

PAUL KURCHINA

SAP Community Evangelist, Connector,
Analyst and Advisor

What are your thoughts on rainbows?

Some people think that rainbows don't have an end. Others think there's a pot of gold at their end.

Same goes for your S/4HANA journey, right? It's never-ending and everyone but you sees it as a cash cow.

But if you change the way you look at things, the things you look at change.

Rainbows are bow-shaped (hence the name). But an airline pilot looking down on a rainbow sees a full circle. A different perspective offers a different shape.

Let's dive into the color spectrum together...

Throughout this guide you'll find advice from the world's leading experts on topics like data, code and security. Look out for this symbol to find out what the experts are saying on this topic.

Expert tip

The colorful world of S/4HANA

Around 35,000 large companies around the world run their business on SAP's high-end ERP solutions.

The last version of this was dubbed ECC (Enterprise Core Component) but it was formerly known as SAP R/3.

In 2015, SAP launched ECC's replacement – S/4HANA. S/4HANA runs on SAP's own HANA in-memory database. ECC runs on "any DB" – Oracle, DB2, Sybase, and confusingly, also on HANA (aka Business Suite on HANA).

S/4HANA has some other features too that differentiate it from ECC. We won't go into them here. Instead, we'll add a little more color to the journey.

In 2021, SAP announced RISE.

Historically, SAP customers ran ECC on either their own on-premise infrastructure, or increasingly had started to move to Azure, AWS or GCP. RISE changed that and bundled S/4HANA onto SAP's own infrastructure service known as RISE – which, again confusingly, could also still be Azure, AWS or GCP.

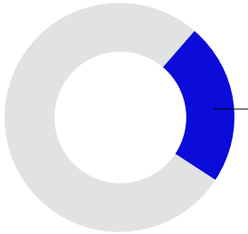
With RISE, SAP performs some (but not all) of the back-end infrastructure operations. Whereas customers previously had to do this, now they pay for SAP to do some bits but still have to retain some in-house people or managed services help to keep their systems ticking over.

Kind of cloud, but not entirely.

Still with us?

Finally, SAP announced in 2023 that they would only make premium new features like AI available to RISE Cloud customers. So, if you were an early adopter of S/4HANA and ran it on-premise or Azure but not via RISE, you lose out.

Soweit alles klar?



Only

23%

of SAP customers are live on S/4HANA

A couple of further points

1

S/4HANA doesn't do what ECC does. If you use certain functions of ECC like payroll, certain aspects of procurement and various other niche industry functions, you have to replace ECC with multiple ERP solutions.

That could be S/4HANA, Success Factors and Ariba, or S/4HANA, Workday and Coupa.

This means that moving to S/4HANA isn't a simple lift-and-shift for many companies.

2

SAP cut their PI/PO integration platform, offering a range of alternative integration options (e.g. APIs, CPI, BTP), meaning customers also need to migrate all of their interfaces.

Then SAP also introduced the concept of Clean Core to remove decades of custom ABAP code out into BTP or ABAP Cloud or into a Low Code layer called SAP Build.

If you're confused, you're meant to be.

These reasons (amongst others) are why just 8,000* SAP customers are live on S/4HANA of the estimated 35,000 total (23%).

Working out how to migrate to S/4HANA is tough.

Building a compelling business case is a real challenge for most companies, especially with a challenging economic backdrop.

Oh, and you have until 2027 (or 2030 if you pay more for extended maintenance) to make the move to S/4HANA as ECC will no longer be supported from 31st December 2030.

*Source: Resulting IT estimate as of July 2024 corroborated with multiple industry experts.

One migration, three colors

If you've looked into this challenge, you've probably already heard of greenfield, brownfield and bluefield S/4HANA migrations. Green and brown echo their respective construction metaphors – building from scratch or building on top of previously developed land.

Take advice from the right people and the choice between greenfield and brownfield can be distilled down into a handful of yes or no questions. And, using this approach can probably save you spending $500k with the Big Four or some other consulting brand.

BROWNFIELD

GREENFIELD

BLUEFIELD

> "Blue has no dimensions; it is beyond dimensions, whereas other colors are not."
>
> Yves Klein

Yves Klein is a French artist best known for his work experimenting with monochrome colors and unique approaches to the physical process of creating art.

Following the Second World War, Klein's interest in Judo took him to Japan where he became the first European to reach the rank of Yodan. During this time he began to learn about Zen and developed a deep interest in the spiritual world.

This spiritual world is reflected in Klein's famous Blue monochrome artworks.

Klein even went as far as to patent his own color - International Klein Blue - which is still under patent and can be purchased to this day.

Close to ultramarine, International Klein Blue is incredibly dense and radiant, and captures the abstract and untamable quality of the sea and sky in Klein's hometown of Nice.

What qualities will you capture in your shade of blue?

BROWNFIELD

- Keep your old system and customizations.
- Keep all of your old data.
- Update (aka remediate) your old code to work on HANA. Potentially do a big spring clean of unused custom code.
- Find replacement software for the gaps between ECC and S/4HANA.
- Potentially keep your existing infrastructure model, but most likely change it.
- Test.
- Educate your business people on minor changes to systems.

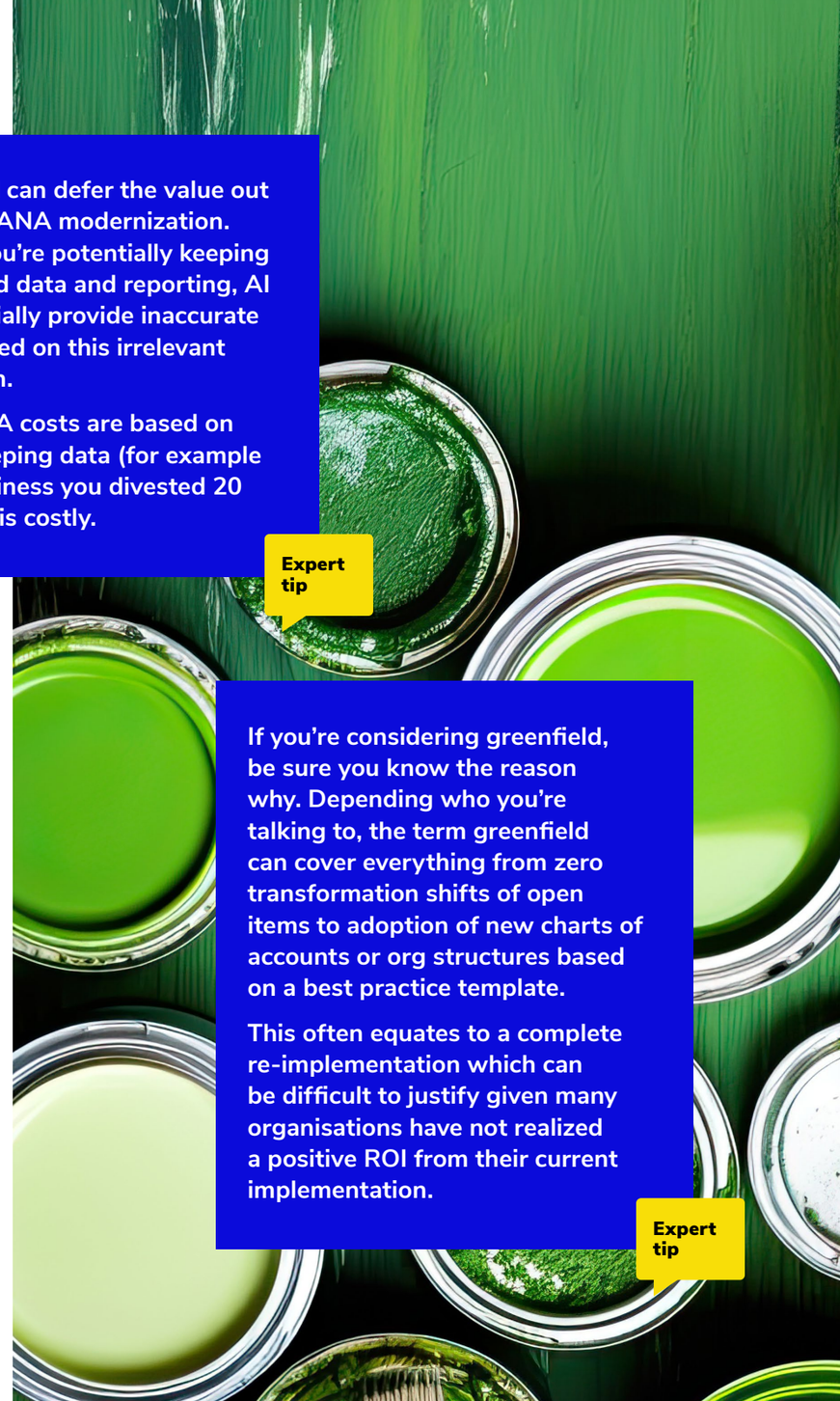
GREENFIELD

- Start with a fresh new system.
- Start with master data and opening items. Archive or historize your old data.
- Re-write your old code and interfaces.
- Find replacement software for the gaps between ECC and S/4HANA.
- Move to RISE or a Hyperscaler.
- Test, test, test, test...
- Educate your business on new processes, ways of working and systems, and manage significant business change.

Brownfield can defer the value out of an S/4HANA modernization. Because you're potentially keeping decades old data and reporting, AI can potentially provide inaccurate results based on this irrelevant information.

Also, HANA costs are based on size, so keeping data (for example from a business you divested 20 years ago) is costly.

Expert tip



If you're considering greenfield, be sure you know the reason why. Depending who you're talking to, the term greenfield can cover everything from zero transformation shifts of open items to adoption of new charts of accounts or org structures based on a best practice template.

This often equates to a complete re-implementation which can be difficult to justify given many organisations have not realized a positive ROI from their current implementation.

Expert tip

BLUEFIELD

But bluefield is more complex.

SNP coined and registered the term Bluefield®, and is one of a handful of data migration tool vendors that can help with the ECC to S/4HANA move.

Some people interpret bluefield as the universal quantifier for the middle ground between green and brownfield.

But Bluefield is really a continuum representing all the shades between green and brown. It gives you the ability to pick and choose where you want to transform and where you don't.

It's the ability to decide where you want to innovate.

Selective data transition (SDT) is a powerful option which can reduce the time and effort by half for those organizations who want to drive targeted change rather than wholesale change from their migration to S/4HANA. It is also flexible, allowing companies to choose which elements they adopt and enabling the whole range of transformation scenarios that sit between a system conversion and a new implementation.

Expert tip

Universal quantifiers are words that over-generalize. In communication, this then leads people to assume that they are non-negotiable givens. Things that are not up for challenge.

"**Everybody** knows this, right?"

"Things **never** go my way."

"This kind of thing **always** happens to me."

You say this stuff **all** of the time.

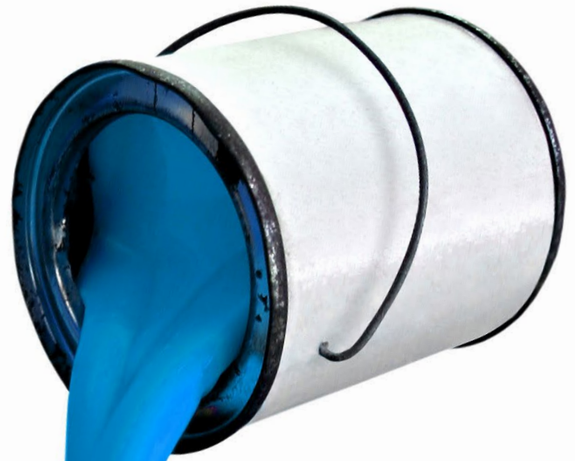
The way to unpack a universal quantifier is to ask "is there ever a time when this isn't the case?"

Examples of the contrary crack open the belief system and allow communication to take a different direction.

The universal quantifier of **blue** is arguably one of the factors that has delayed S/4HANA adoption globally by over-generalizing and limiting creativity in options when planning the move to S/4HANA.

And that's why we created this ebook. To challenge an industry-wide belief system and enable 27,000 SAP customers to move out of stasis.

So, get ready for a gentle spanking, and we'll tell you why there are fifty shades of blue.

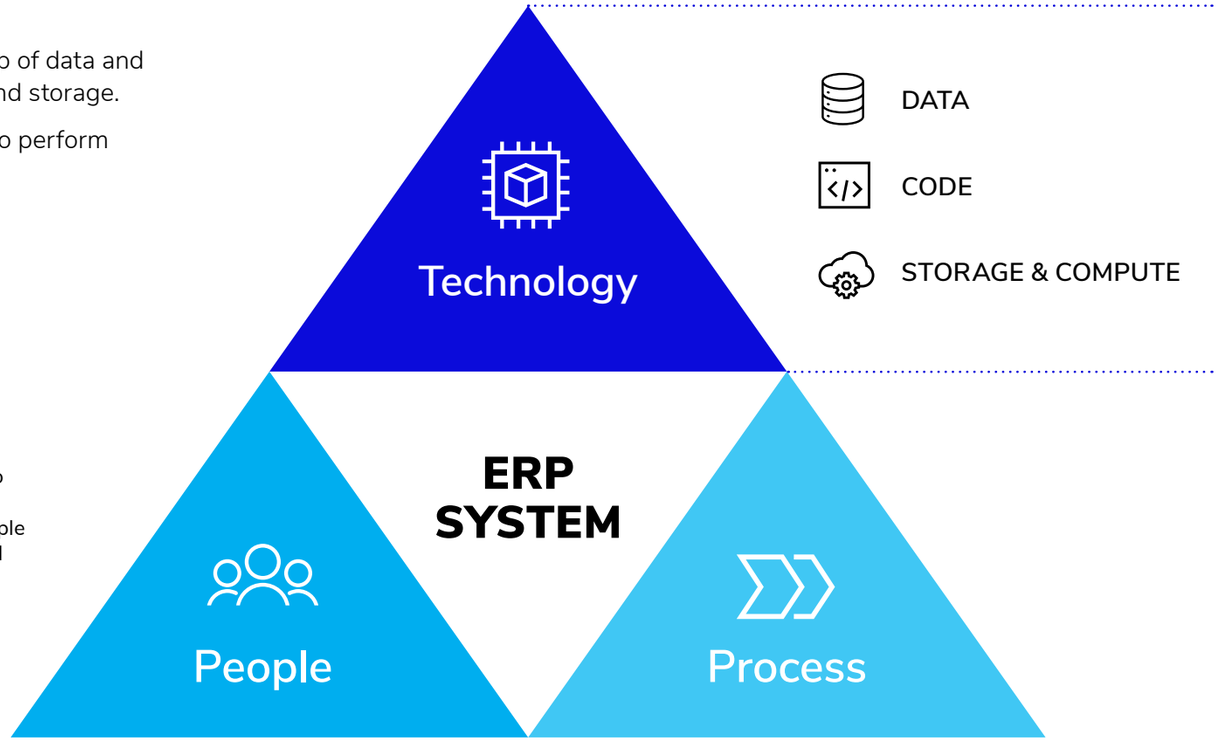


We've deliberately simplified what follows for a non-technical audience. If geeks want to pick holes in it or add extra layers of complexity, fill your boots. But it is exactly this kind of detail we're looking to avoid in the interests of helping 27,000 ECC customers to work out how to get out of SAP stasis by 2030.

What is an ERP system?

Ultimately, systems are made up of data and code sat on top of computers and storage.

People* interact with systems to perform processes.



DATA

CODE

STORAGE & COMPUTE

*IT people use the term **users** far too often. It will serve you well to stop using **users** and instead refer to people as **people**. It's more human, personal and meaningful.

In 1964 Dr. Harold Leavitt created the Golden Triangle of People, Process and Technology. It has since fallen into common parlance in every business transformation project. Leavitt was an expert on managerial psychology and organizational decision-making.

In the 60 years since Leavitt's first Golden Triangle, technology has become a little more complex. Hence, we've unpacked technology – data, code, storage and compute. We could have gone further, and the move to S/4HANA is complex enough without over-gilding the triangle.

How this guide works...

Imagine for a moment that your move to S/4HANA is a renovation of a tired old house. You're keeping the foundations and walls but have free rein to remodel and decorate to suit your future lifestyle.

The shades and pigments that follow can be used in combination to create a mood board for your renovation.

You may be OK with a green house, or a brown house.

But on the color charts that follow, you'll find inspiration for your own unique SAP renovation.

Many of these colors aren't mutually exclusive – they can be combined as pigments to **create your own shade of blue.**

Your own style of migration.

Let's start with the different shades of data...

You're either sticking with the system you have today and moving across some (or all) of your data, or you're creating a new greenfield S/4HANA solution but will still need access to some of your old data.

According to both Gartner and the SAP User Group, data migration is one of the major causes of risk in the migration to S/4HANA. This is simply because companies address the scope and challenges of data migration too late. The more ambitious the business transformation, the more complex the data transformation. Companies can mitigate the risk of problems during data migration by bringing forward some of the discovery work related to data migration in order to get an early view of scope, approach, plan and challenges.

Expert tip

Even for greenfield you may still need data migration and transformation.

You want a new chart of accounts? A new org structure? To eliminate old data? Can you imagine how many locations the account number and company code are stored in? It could be in the thousands.

Expert tip

When it comes to data you should think holistically. Your focus is likely on the production system – getting it set up right to run the business in the most efficient way possible. However many SAP customers ignore or forget that the non-production landscape is larger in terms of size and cost. This is why selective data transition (SDT) can be a key enabler.

Expert tip

Shades of data...

Full migration

Convert your ECC system to S/4HANA and migrate all of your data across (classic brownfield).

Company code

Take one company code and all of its associated data across. Repeat this process for each company code into your new S/4HANA environment. And, use this opportunity to get rid of the long ago divested companies that are no longer required.

Upgrade

Continue using your existing system and slice out the data you no longer want, leaving you with a leaner system to upgrade to S/4HANA

Custom data needs to be addressed too. If you choose not to migrate custom code the tables that support it can be left behind as well, or used to enrich standard SAP tables.

Expert tip

Archive first

Spend time moving your old data into archive to reduce the size of your current ECC data footprint.

Parallel operation

Run your existing ECC system for some data scope alongside your new S/4HANA system for other data scope (e.g. company code) to reduce disruption to your business operations and stretch out the cutover window.

Time slice

Take all of your data scope but pick a cut-off point in time and only take historical data after that point in time. This reduces your data footprint (and cost – remember HANA is an in memory DB so you're paying more for your data storage than you would have done with traditional 'disk' storage).

Data reorganization

Combine data structures (company codes or other enterprise structure elements) as you transfer, enabling selective migration at the same time as data rationalization.

Shell copy

Make a clean copy of the code base of your existing system and selectively slice data into it, reducing downtime and simplifying your cloud migration.

Historize

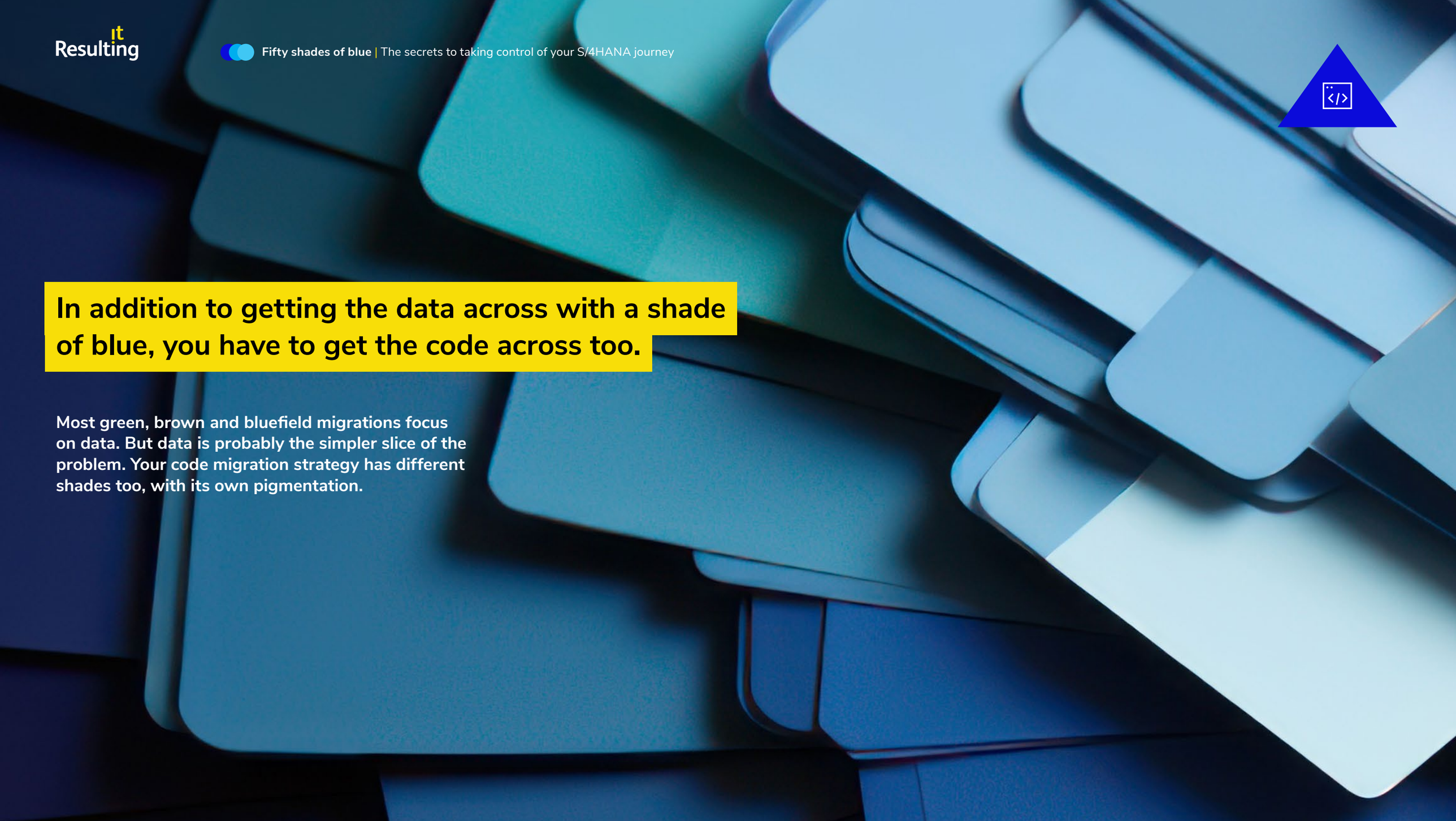
Put all of your old ECC data into cold storage so that it can be accessed afterwards (some industries demand 7 or more years of data to be retained) either stand-alone or via your S/4HANA solution.

The two defining elements of a selective data transition (SDT) are a shell system copy and a data migration using landscape transformation software. SDT is a powerful option that can reduce the time and effort by half for those organizations who want to drive targeted change rather than wholesale change from their migration to S/4HANA.

Expert tip

You can migrate only the information that is needed to live systems reducing the data volume by up to 75%. Typically this results in a 50% lower migration cost.

Expert tip



In addition to getting the data across with a shade of blue, you have to get the code across too.

Most green, brown and bluefield migrations focus on data. But data is probably the simpler slice of the problem. Your code migration strategy has different shades too, with its own pigmentation.

Code pigments...

Manual code remediation

Some of your ECC code won't work with the new S/4HANA database. You'll have to convert all the offending lines of code to work with S/4HANA. Your SI will probably want you to use their team of developers to do this.

Automated code remediation

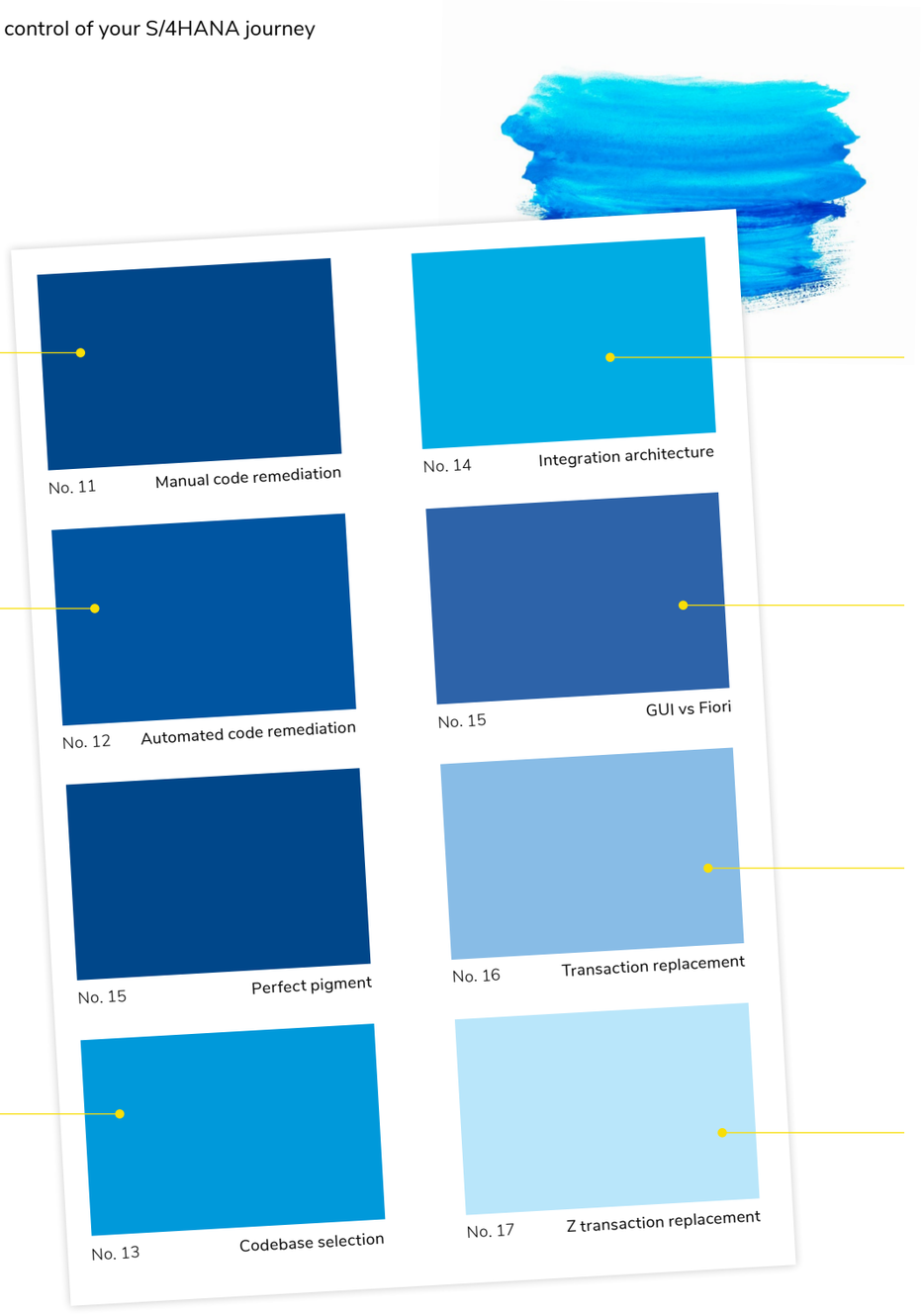
Alternatively, you can look at tools that automate the process of remediating code to work with HANA. This saves money but crucially saves months of elapsed time.

With intelligent automation you can remediate more than 95% of the required fixes for HANA and S/4HANA automatically, and deliver secure, stable and optimized code within a couple of computing hours

Expert tip

Codebase selection

You'll have to work out what you're going to do with your existing custom code. Rather than 'clean core' think about which codebase you'll use for your custom ABAP code (Stick with ABAP, move it to ABAP Cloud, refactor in BTP, look at alternatives).



Integration architecture

If your SAP interfaces use PI/PO, you'll need to look at alternatives. BTP, APIs, Azure Integration, other middleware?

GUI vs Fiori

Fiori is the replacement UI for SAP's aging GUI. However, not every transaction has a Fiori alternative. Knowing which ones are which, and deciding if you want to change your UI for certain business people is an important consideration.

Transaction replacement

Some of your existing SAP transactions will be defunct. Do you know what they are and which functionality (transactions or Fiori) you'll replace them with?

Z transaction replacement

You probably built your custom code decades ago. Since then, many layers of new functionality have been added to SAP (ECC and S/4) which you might not be aware of. Which custom "Z Transactions" can you replace with standard functionality you've already paid for?

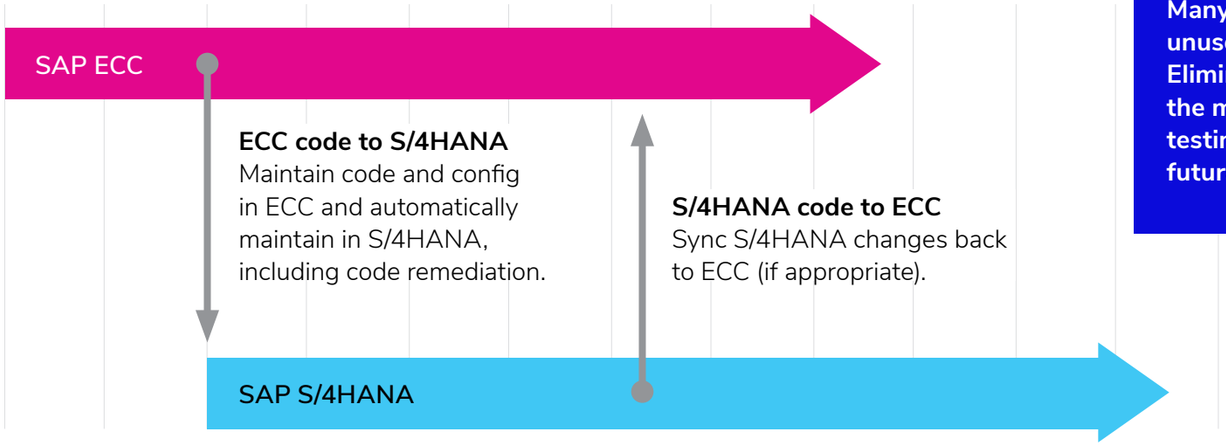
Darker shades of code

Dual maintenance

If you're running a large, global ECC solution, or multiple ERP instances that you intend to move to S/4HANA, you're unlikely to migrate your whole company in one shot. The business disruption and complexity of a global big-bang go-live make this approach too risky. In reality, it will take you months or even years to move every country, business unit or plant over to S/4HANA, taking into account the technical, data, and business change management challenges.

This means you'll be operating in a parallel universe – with both ECC and S/4HANA running side-by-side across different parts of your business. And this is where the dark umbra of dual maintenance throws in additional complexity.

Changes you make in ECC may need to be replicated in S/4HANA, for example, new payment terms, code fixes, legislative changes, tweaks to common business processes, or interface mappings. Some of these things will be configuration changes, others may involve code changes. But the code in ECC is different to S/4HANA and will need remediation to run on the HANA database. So you'll need to both keep track of these changes and make technical adjustments to them as they're mirrored in both environments. What's worse is that there may also be changes made in S/4HANA that need replicating back into ECC during your period of dual maintenance.



All of these changes need to be tracked through dev, test and prod environments using some form of tooling (don't forget that Solution Manager/CHaRM goes out of support at the end of 2027) that can span both landscapes.

Over time, the density of change will shift with one system becoming the master and the other becoming the slave. But this could span many years for the most complex of SAP customers, meaning that you need to plan the processes, tooling and governance to manage dual maintenance right at the outset.

Many customisations are unused. Literally thousands. Eliminating these as part of the migration reduces testing and streamlines future updgrades.

Expert tip

Automation has emerged as a crucial solution to mitigate the challenges of dual maintenance. It's possible to automate the entire change and release process, helping you eliminate risk, ensure security, enable seamless synchronization, and minimize business disruption.

This helps organizations embrace complexity and gain a competitive advantage. Automation streamlines the manual, tedious, and error-prone task of replicating changes in parallel development tracks, reducing the risk of errors and delivery time. It also overcomes change freezes, increases visibility, ensures sequencing and compatibility, mitigates cutover errors, and avoids project delays by automating code remediation.

Expert tip

Code modernization

In the old ECC world, the majority of your custom code will have been ABAP – SAP's proprietary development language.

To move to S/4HANA this code needs to be converted (aka remediation) - but that is only if you decide to take it with you. In most cases 80% of custom code remains redundant and unused. It makes little sense to carry over this technical debt to S/4HANA.

You need to create an inventory of your custom code and decide if it is needed and, if so, in what guise.

Clean core is the term used to describe taking all custom code out of the ABAP core and moving it into a separate cloud-based environment. Clean core means that upgrades are simpler and the complexity of managing your SAP environment reduces significantly. This leads to lower costs and greater agility - enabling you to make changes faster to meet changing business needs.

This code modernization approach involves using platforms like SAP BTP, ABAP Cloud, Low Code platforms like SAP Build, or other Web Services-oriented development technologies as an alternative to custom ABAP code in the core.

The questions you have to answer are many...

Is clean core viable for your level of customization?

Will your clean core be immaculately clean (zero ABAP), a little grubby (some ABAP) or pretty dirty with some spit and polish?

Which technologies will you adopt for non-core code? And in which circumstances?

How will you manage change across these coding methods alongside core SAP configuration as you make changes?

How will you do this in the context of a dual maintenance landscape?

What skills will you need to build as you move from an ABAP world to some other cloudy world?

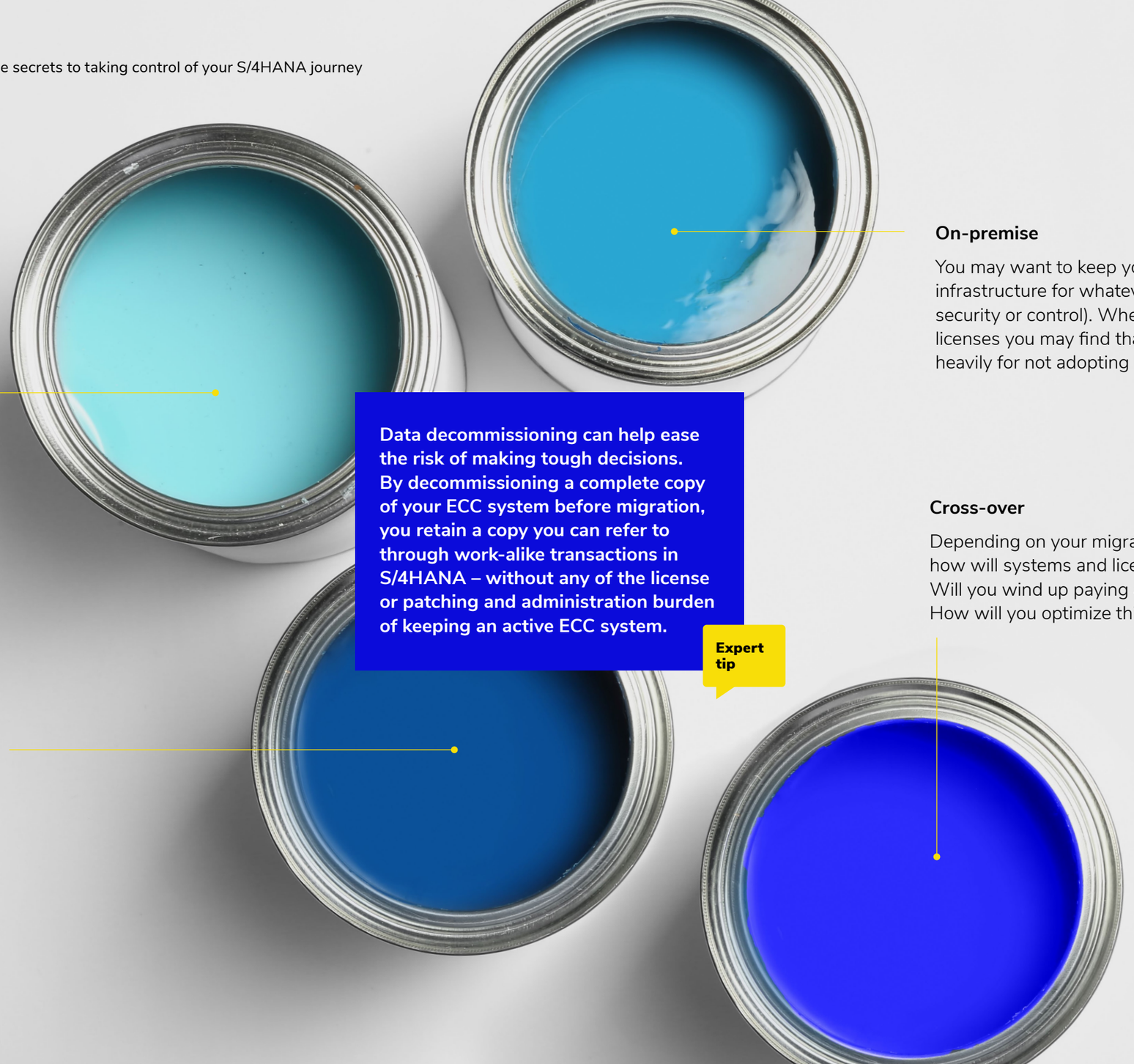
Expert tip

It's unrealistic to achieve a fully clean core. The best you can hope for is cleaner core. Some of your customizations support what truly differentiates your company – how you make a product for example – and should not necessarily be changed, although should be done in a compliant way.

Your S/4HANA system will need to run somewhere.

Don’t forget that an in-memory database uses expensive memory as storage – not disk – meaning that the shape of your infrastructure will be quite different.

Storage and compute (aka Cloud) pigments



Hyperscaler

If you already have a preferred hyperscaler, you can move your S/4HANA system to them – AWS, Azure, Google. You may already have it with one of them, in which case you can build out new virtual infrastructure alongside it.

RISE

SAP's own commercial wrapper for your hyperscaler (or their own service). SAP's licensing model, internal sales incentives and therefore discounts are geared toward selling cloud. This means that the gravitational pull towards RISE is inevitable.

On-premise

You may want to keep your own infrastructure for whatever reason (e.g. security or control). When SAP re-cut your licenses you may find that you're penalized heavily for not adopting RISE.

Expert tip

Data decommissioning can help ease the risk of making tough decisions. By decommissioning a complete copy of your ECC system before migration, you retain a copy you can refer to through work-alike transactions in S/4HANA – without any of the license or patching and administration burden of keeping an active ECC system.

Cross-over

Depending on your migration approach, how will systems and licensing cross-over? Will you wind up paying a double-bubble? How will you optimize this?

Digital passport

Historically, SAP has licensed by the number of users. This was nuanced with different costs from standard and professional users, but this has since evolved through FUEs (Functional User Equivalents) and now on to a nested model built around different user types for finance and supply chain capabilities.

Following the furore around indirect access (non-licensed users accessing SAP via interfaces or APIs) SAP has introduced digital access which moves away from users to documents.

This means that the volume of documents created becomes the scaling factor of your license fee. There are nine document types, two of which are discounted to 0.2 rather than a full cost.

The more documents you post, the more you pay.

The licensing impact is vastly different. Something to think about if you're considering using clever tech to automate your supply chain.

Greenfield is starting again, brownfield is keeping what you have today, and these shades of bluefield are somewhere in the middle.

But, if you're only thinking about technology as part of your S/4HANA transformation, you're kind of missing the point.

Whatever you do with your technology, you're keeping the same business. The people, assets, geographies, products, services and processes aren't being thrown away. You're keeping most of that stuff, right?

Sure, you'll change a few processes, tweak your business model and may re-organize parts of your operating model, but your business is innately the same.

Process pigments

Data mining in tools like Signavio or Celonis are great ways to get insight into your business processes, but only if all of your processes run in SAP. Some finance departments run 80% of their processes off-system in Excel – so the only way you'll get a complete picture of your processes is to use task mining instead.

Expert tip

As-is

Do you actually know what your as-is processes are? Is gaining a view of how your business runs today an important first step on the journey?

Automation

Are you removing people from parts of your processes or augmenting people with robots to free up resources or improve process performance?

Shared services

Are you looking to bring certain (standardized) processes into a shared service capability for economies of scale, central control or to outsource?

Controls

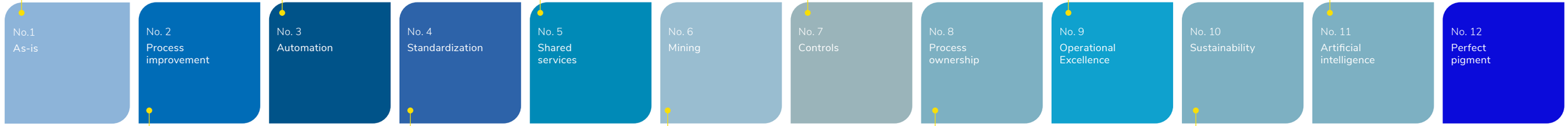
Do you need to improve process controls and compliance? Are external governance factors driving a need to implement better controls? How might this work in a multi-ERP world?

Operational excellence

Is there a drive for a model of ongoing process improvement – Six Sigma, Lean, Kaizen or similar?

Artificial intelligence

Will you look at how AI can improve your processes to drive competitive advantage?



Process improvement

Are you changing how you do certain things?

Standardization

Are you looking to consolidate processes that vary across regions or business units so that they are more uniform so that you can improve measurement and control?

Mining

Are you looking to mine data or tasks that your team perform so that you better understand process metrics, variations and opportunities for improvement?

Process ownership

Do you have a process ownership model today? Do you need to move to a world where people have responsibility for process performance?

Sustainability

Have you considered which business processes will move the needle on your ESG performance, either because you want to or because you will be forced to?

People pigments

Operating model

Will the way you organize your business functions change as part of this journey?

Capabilities

Do you understand your current capabilities, and will any of them need to radically change or improve as part of your strategy? And, do you have the necessary skills to deliver your strategy across business and IT?

Change impact

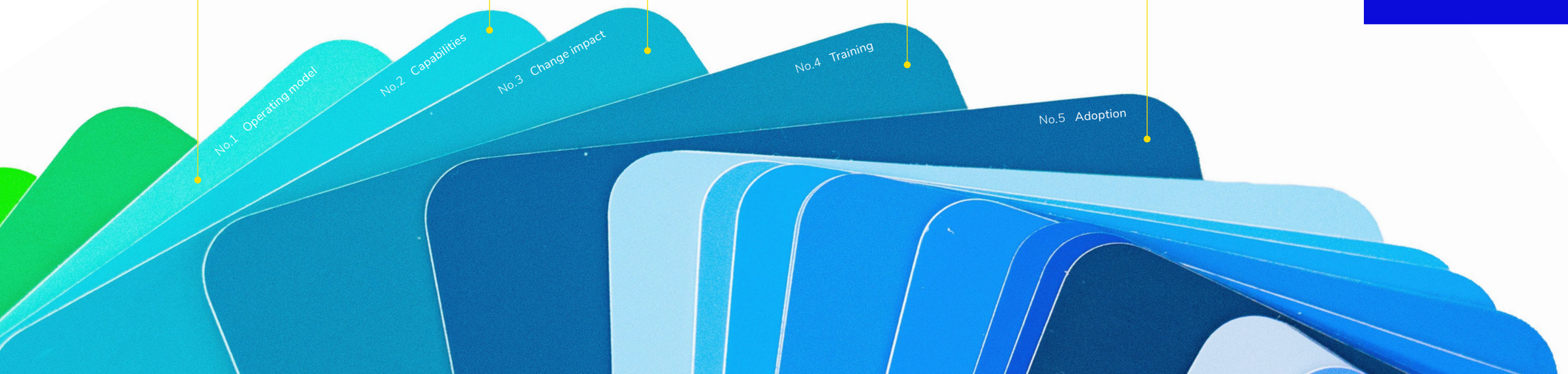
If you move to S/4HANA, do you understand what is different from a day-to-day perspective for your people? How will their roles change?

Training

How will you educate your global workforce in new ways of working as you deploy a new solution with a different UI and improved features?

Adoption

How will you measure adoption as your business people move from old to new ways of working?



50% of SAP projects don't deliver on their intended business objectives and the number one factor that influences the half that are successful is a relentless focus on adoption. This is pretty obvious, right? If people don't adopt the solution nothing changes and you won't improve or transform the way you operate.

Expert tip

People pigments

Delivery model

Are you clear on the way that you'll move to S/4HANA. Will you appoint a Systems Integrator? Will you appoint a group of SIs for different aspects of the technology if you have a hybrid ERP model? Will you appoint best-of-breed consultancies to address data, change management, technical build? Will you do it yourself?

Bandwidth

Does your business have sufficient bandwidth at the right seniority to deliver a major ERP program alongside running the business?

Sponsorship

Do you have the necessary CxO sponsorship to deliver an ERP-enabled business transformation or a technology lift and shift that will ultimately impact your business anyway?

Center of excellence

Do you know what organization you'll need to build to run your S/4HANA system in the future? How will you deal with the need for new skills, shift to Cloud/ RISE, replacing an aging workforce, in (or out) sourcing certain functions?

Security

Do you understand how existing security policies (for example roles, permissions, controls) will need to change as you move to S/4HANA?

SAP S/4HANA offers enhanced security features compared to SAP ECC, including advanced data encryption, more robust identity and access management, and comprehensive audit logging, providing stronger protection for your enterprise's critical data and processes.

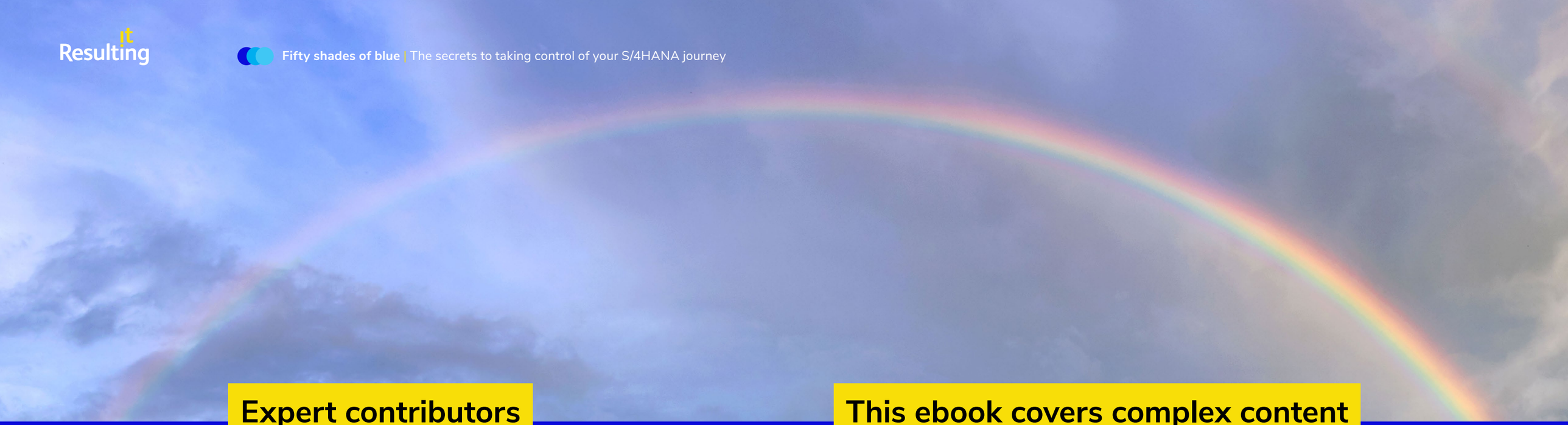
Expert tip

Creating your own unique shade of blue

We don’t think you should be tied down to three colors when planning such a big project.

If you want to explore how to move forward with your journey from SAP ECC to S/4HANA (or to other ERP solutions) then speak to us.

Our seasoned independent consultants and expert delivery partners will help you paint a clearer future.



Expert contributors

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This ebook covers complex content

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