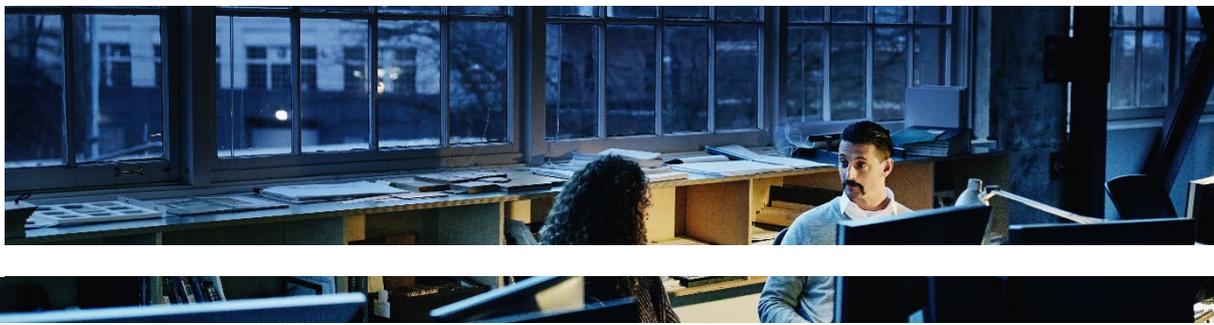


Smart Greenfield for maximum value S/4HANA business transformation





Why are many S/4HANA transformations not adding business value?

Across every industry, a rapidly increasing number of organisations are transforming their business around S/4HANA. These very large transformation programs are almost always seen as not just a technical upgrade, but rather as a unique opportunity to holistically evaluate and optimise the way the business runs.

The need for a more agile, scalable and value driven business process chain and IT landscape is high on the joint agendas of CEOs and CIOs, while emerging technologies such as artificial intelligence (AI), internet of things (IOT) and robotics are enabling exciting new business models and increasing business productivity. Improved data flow and transparency, as well as enhanced collaboration platforms, are increasingly required across organisations to allow decision makers to draw insights, foresee future trends and enable them to take the right decisions to do the right things at the right time.

Expectations are thus often understandably high. Why is it then that many S/4HANA transformations are not realising their anticipated business value?

Initial setup and focus is critical

The two most important factors consistently observed across such programs that have been paused, refocused or aborted were 1) lack of a clear program setup and implementation approach from the start and 2) insufficient focus on efficient design and value adding solutions.

As a result, these programs have especially struggled with gaining and/or keeping business buy-in.

In one prominent example, a large global organisation onboarded the business stakeholders at an early stage on their S/4HANA business transformation, establishing a separate workstream focused on aligning business value drivers. This tactic was viewed positively and helped establish a joint value-based vision across IT and the disparate business units. However, those same stakeholders ultimately became frustrated with a design and implementation approach that struggled to establish an approach for standardization and instead tried to rapidly push through a brownfield “lift and shift” approach. As a result, the program has been put on hold and faces an uncertain future.

Avoiding typical pitfalls with a smart approach

In this paper, we will consider the challenges and strengths of the typical implementation approaches taken for large S/4HANA transformations. Based on this – and specifically the identification of several key success enablers – we will then outline the approach we have taken to ensure our clients are consistently achieving their business value goals in their transformation programs. We call this approach Smart Greenfield.

Standard S/4HANA transformation approaches face critical challenges

One of the major cornerstones of the S/4HANA transformation journey is to decide on the appropriate implementation approach, where business size, business requirements and legacy situation are amongst the typical factors to be considered.

The two most common implementation approaches offered by the market are greenfield or brownfield.

Starting from scratch with Greenfield

The greenfield approach gives an organisation the chance to start its transformation project on a 100% standardised environment of SAP S/4HANA. This option requires performing customisation from scratch and building all business processes on SAP Best Practices which can be activated through scope items. It can be seen as a chance to go back to standard and make a clean start. However, this seemingly simple approach usually comes at a cost – namely, the loss of existing differentiating custom business functionality.

Build on as-is with Brownfield

This option is favourable if organisations are looking primarily for a technical upgrade taking their current SAP ECC 6 system as the starting point for the “lift and shift” conversion. All master and transactional data will remain during the upgrade. Again, however, there is a downside for most organisations, where the opportunity to develop a modern ERP architecture focused on standardisation is lost (as seen previously in our paper “[Demystifying standardisation with S/4HANA](#)”).

Standard greenfield and brownfield approaches do not meet the market needs

PwC has analysed present market needs by surveying what clients are weighing as the most critical challenges to the critical path and business value realisation of their S/4HANA transformation. The results, grouped by company size and implementation approach, can be seen in the figure below.

S/4HANA transformation programs - most critical challenges to the critical path

Responses from S/4HANA transformation program leads indicating what they see as critical challenges.

S/4HANA transformations for large companies (>10b € revenue)

Brownfield	Greenfield
1 Solution option decisions	1 Solution option decisions
2 Implementing solutions	2 Understand S/4HANA benefits
3 Testing effort and focus	3 Driving best design
4 Understand S/4HANA benefits	4 Implementing solutions
5 Manage Go-Live	5 Testing effort and solutions

S/4HANA transformations for small companies (<10b € revenue)

Brownfield	Greenfield
1 Testing effort and focus	1 Understand S/4HANA benefits
2 Implementing solutions	2 Drive best design
3 Solution option decisions	3 Solution option decisions
4 Understand S/4HANA benefits	4 Organizational readiness
5 Drive best design	5 Implementing solutions

Success Enablers address the critical challenges

If we compare the results in the figure on the previous page, we observe that there are different views of what the most critical challenges are between conversion and greenfield projects and based on company size.

In large organisations, we observe that the decisions related to solution options are of highest priority. For companies running programs at such a scale, it is clear that strict governance based on design principles and supported by a design authority is needed to enforce solution decisions and keep business value in focus. This holds especially true in greenfield programs, where getting clarity on the agreed target benefits is also seen as critical.

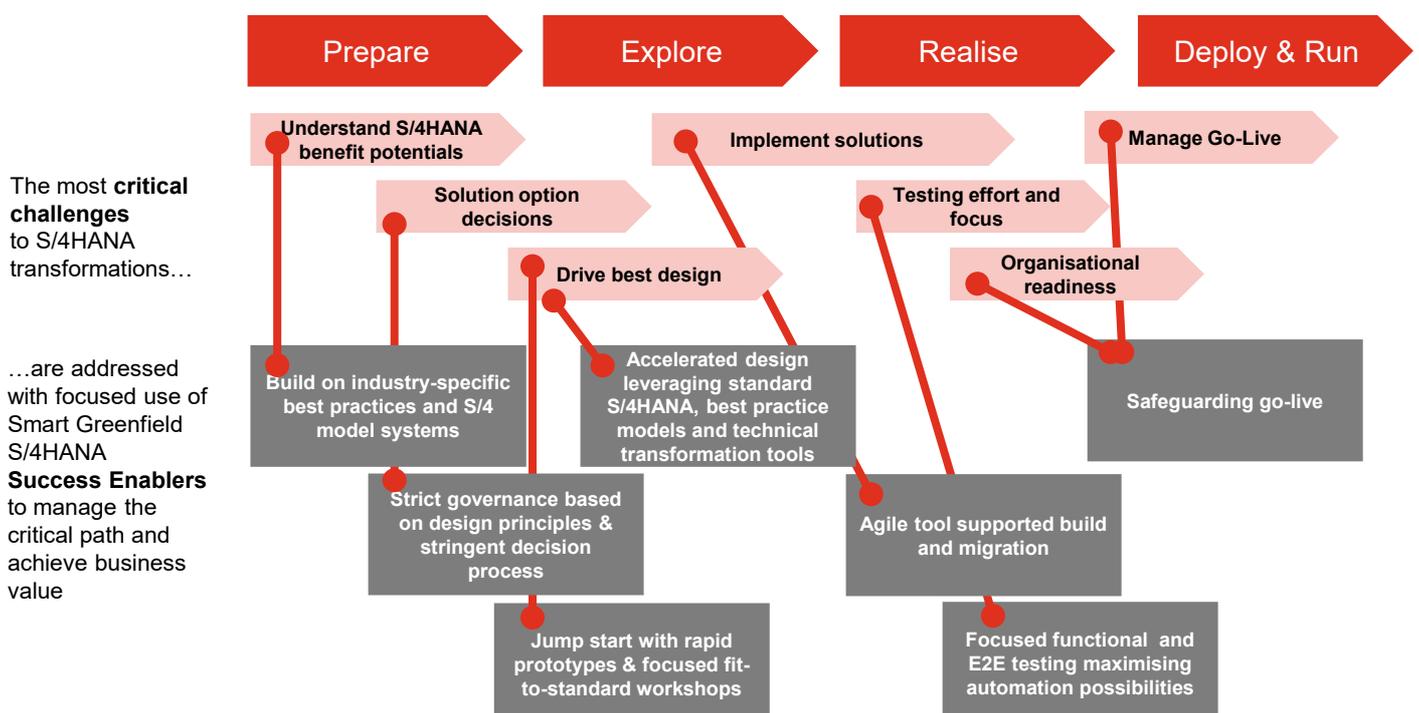
In smaller greenfield transformations, there is also a major focus placed on benefit potentials, as well as on driving the best design usually leveraging standard S/4HANA to a high degree.

Smaller brownfield migrations, on the other hand, tend to be mostly concerned with the tactical aspects of the project, including testing and implementation approaches.

Identifying Success Enablers to address the critical challenges

Over the last years PwC has increasingly taken a hybrid approach which combines the best features from both greenfield and brownfield, complemented by a set of in-house and external business transformation assets and tools to manage the migration of large volumes of data and custom code. As seen in the figure below, the selection and building out of these features, guidelines, capabilities and tools – which we call **Success Enablers** – was specifically aimed at addressing the most critical challenges that our clients are facing. In this fashion, the **PwC Smart Greenfield** approach was developed.

Success Enablers address the most critical challenges across each phase of an S/4HANA transformation





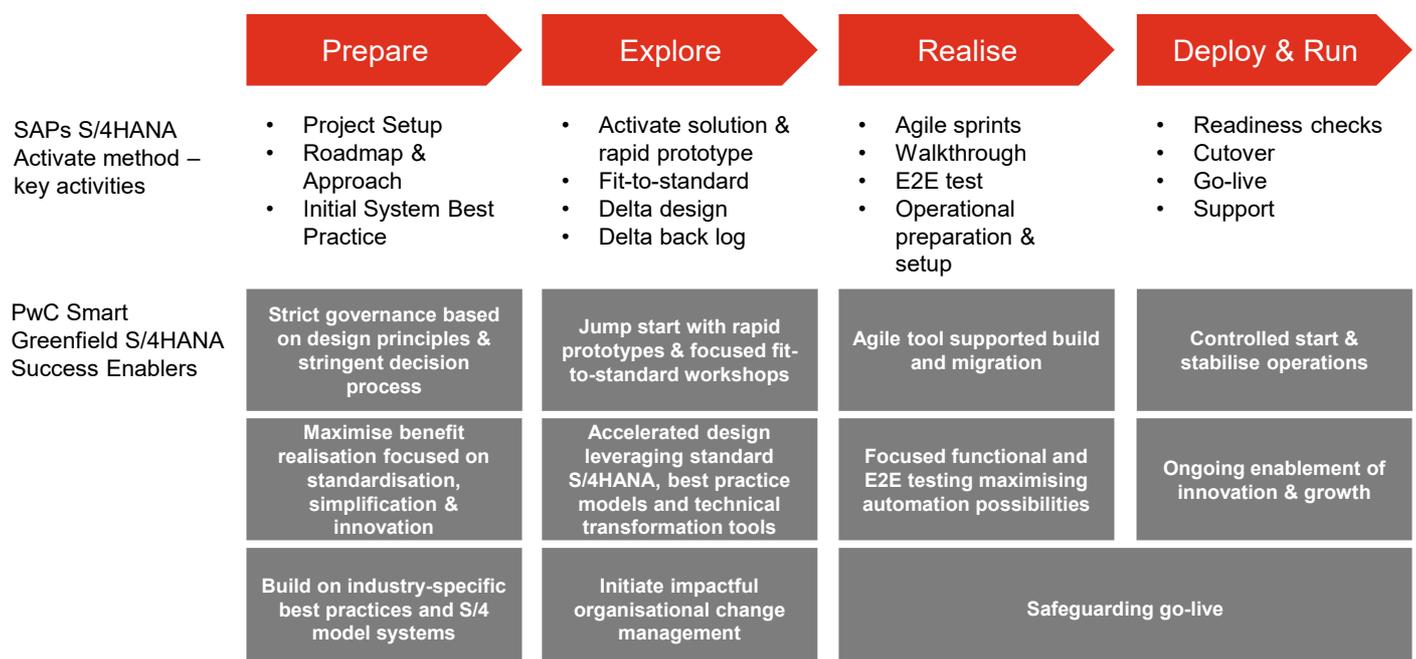
Focus on the success enablers for a Smart Greenfield transformation

In bringing together the aforementioned Success Enablers, the PwC Smart Greenfield approach strives for standardisation, harmonisation and simplification but concurrently foresees the technical migration of tailor-made custom code and a relevant set of master and transactional data. The approach is based on the principles of SAP Activate methodology. It is most often deployed at clients who have a complex legacy environment with many SAP and non-SAP applications running tailor-made custom code

programs; however the principles largely apply across any major S/4HANA business transformation.

In the following pages we focus on the most important enablers in the PwC Smart Greenfield approach and explain how they help to overcome challenges, reduce risks, increase efficiency and ensure that the transformation objectives are met.

PwC Smart Greenfield approach based on the most important Success Enablers



Prepare phase: prioritise design principles and business value

Once a client has made the decision to move forward with an S/4HANA business transformation, their vision and strategy is assessed in the Prepare phase. Centrally defined guiding principles lay the foundation for standardisation, harmonisation and simplification and will drive solution development and build. Based on current business requirements and future vision, a scope is defined and a high level fit-to-standard exercise is being performed against SAP Best Practices. A program roadmap is drafted to overlook the entire journey from solution design through the last go-lives within the organisation.

The following Success Enablers are critical during the Prepare phase:

Strict governance based on design principles & stringent decision process

Experience has shown that the introduction of a strict governance organisation is critical to steer the program and involve all stakeholders to contribute to the objectives of the program. The governance framework builds the backbone of the program and acts as the control unit of the entire program. Typically the governance framework consists of three layers: the project management team steering the various teams (functional as well as technical), the design authority representing the senior business process owners and decisions makers, and the steering committee acting as executive sponsors. For a deep dive into this topic refer to our paper [“Design Authority – the key to securing your S/4 goals”](#)

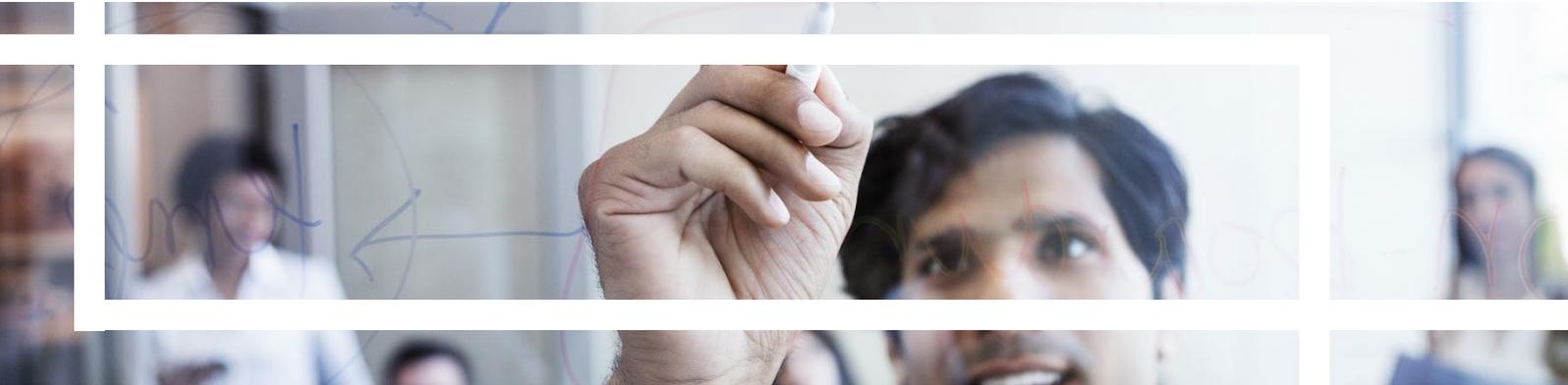
Maximise benefit realisation focused on standardisation, simplification & innovation

The smart greenfield approach ensures that the program never loses sight of its objective to maximise business value and unlock unrealised business benefits. This means having full and transparent understanding of the critical business levers that will drive value through the

introduction of S/4HANA. If solution design follows the principles of harmonisation, standardisation and simplification, the business processes will enable the organisation to run more efficiently and unlock untapped business potential. The business levers will be linked to the business processes and measured through KPIs so that each design decision can be verified against its contribution to the value it generates.

Build on industry-specific best practices and SAP S/4HANA model systems

In our experience, the most successful S/4HANA business transformations take advantage of an appropriate reference system, providing a head start for the program. One of the fundamental differences behind smart greenfield is that an organisation is not starting with a blank slate for template design. Rather, the usage of a pre-configured, pre-tested and documented reference system like the PwC Industry Edge Solution helps to evaluate the back-to-standard potential and build the foundation for the Discovery and Explore workshops.



Explore phase: jump start the business transformation

Solution design, including first prototypes, is the main focus of the Explore phase. In Smart Greenfield, a key deliverable is the creation of a prototype solution by activating the SAP Best Practices and configuring the previously mentioned PwC Industry Edge S/4 reference solution based on the requirements of the business.

The following Success Enablers are critical during the Explore phase:

Jump start with rapid prototypes & focused fit-to-standard workshops

The Industry Edge solution allows early activation of the solution and enables the project team to showcase the standard processes through the usage of customer specific master data. The base customising is defined during the Explore phase, and the process owners get a first glance of their future solution. This approach of rapid prototyping is a key accelerator to jump start the transformation in a fast and efficient way

Accelerated design leveraging standard S/4HANA, best practice models and technical transformation tools

Fit-to-standard analysis and delta design workshops are facilitated during Explore, where the Industry Edge solution is taken as a starting point and tailored to the needs of the client. The smart greenfield approach dictates to activate standard best-practice solutions but also identify the specific client needs where the transfer of the custom codes from the legacy are unavoidable.

The result of the fit-to-standard analysis is a product backlog which contains all the future functional features of the S/4HANA solution. The backlog contains specific requirements which will be covered by the activation of standard features but also gaps which need to be developed or taken over from the legacy systems. The right balance between the activation of standard functionality and transferring necessary custom code is what makes the smart greenfield approach the preferred implementation technique in this respect.

Initiate impactful organisational change management

The smart greenfield implementation approach not only considers technical and functional aspects of a transformation, but also identifies the changes and new ways of workings from an organisational point of view. Standardisation and harmonisation bring along a new mindset which usually has to be adopted through intensive communication and training in the organisation. PwC applies a change management framework where change impacts are detailed, a detailed change action plan is outlined and the future end users are trained to adopt the changes for the post-go live era. This approach helps to raise the confidence levels in the end user community, explain the relevance of the new solution and reduce fears and uncertainty.

Realise phase: smart technical migration and automated testing concepts in the agile build

The Realise phase takes the principles, key decisions and design from the Prepare and Explore phases and enables the project team to build and test the solution in several iterations.

The following Success Enablers are critical during the Realise phase:

Agile tool supported build and migration

Smart greenfield uses a hybrid agile approach supported by modern tools for automated custom code conversion and selective data transition.

This approach allows an organization to selectively redesign certain aspects of their system while also keeping the ones that work. This is done at the same time as the project is cleansing and moving selective master and transactional data (including historical data) into the new S4/HANA system.

Similarly, in smart greenfield approach, it is possible to aggressively clean-up unused code and perform automated conversion of custom objects to HANA, S/4HANA and modern coding standards

The solution is built in several iterations organised in series of sprints of 4-6 weeks of duration. The base customising which was defined during the Explore phase is taken as the starting point, and the product backlog serves as the base to plan the sprints. Based on the size and complexity of the project, a number of (typically) monthly sprints are planned to detail design, build, playback and sign-off the future solution. The advantage of the agile approach compared to the typical waterfall approach is that feedback cycles are shorter which allows faster time-to-value. This also ensures that retrospective corrections to the solution can be kept at minimum. Small acceptance cycles within each sprint also decreases the effort and risk for the final UAT prior to go-live. One challenge is to

make the user stories fit within the duration of a sprint and find the right level of sprint planning where standard processes, developments (RICEFW), reporting, roles & authorisation testing can be done in the most effective way. The speed of business decision taking is essential and has an effect on the velocity in the sprints. The longer it takes the business to make design decisions, the more sprint replanning is required. The design authority plays a crucial role to support the business teams in decision taking and allow the sprints to be completed on time with the planned velocity.

Focused functional and E2E testing maximising automation possibilities

The agile approach is a smart way to slice and dice the design and build activities and assure functional testing within the sprints. With the power of automated testing techniques, it is possible in smart greenfield to execute thousands of test cases in a matter of minutes not days.

A more traditional waterfall type of Integration test remains most ideally suited to test the technical connectivity and the integrational aspects of the future solution. The smart greenfield approach foresees that at least three rounds of integration tests are being performed where global and local business requirements together with the technical connectivity of all developments (RICEFW) are being tested.

The data migration has to be tracked as a parallel project stream and the data loads where extraction, mapping and loading of data are being tested have to be interlinked with the integration test phases. The end-to-end test scenarios have to cover “day in a life” scenarios which will represent real use cases cutting across the entire process chain.

Deploy & Run phase: safe and stable start with an eye on future improvements

The last phase in the smart greenfield approach is the transition to the target operating architecture. All new processes and developments will be activated, data from the legacy systems will be migrated and the switch to the new system will be made. Several readiness checks and quality gates need to be passed in order to take the go/no-go decision for the go-live. The approach foresees that cutover simulations and dress rehearsal initiatives will be performed in order to practice the transition and get a qualitative and quantitative indication of the readiness to go-live. A detailed go-live support organisation has to be formed where 24/7 support must be assured with the right people.

The following Success Enablers are critical during the Deploy & Run phase:

Safeguarding go-live

The smart greenfield go-live is secured with a S/4HANA transformation safeguarding frame consisting of elements of cutover planning, risk assessment and support organisation setup, all of which are underlined by the overall program governance structure.

The cutover plan is a fundamental deliverable which outlines the way how the transition to the new environment will happen. As the smart greenfield approach combines several technical and organisational building blocks it is essential to clearly document when the individual blocks are being put together. The cutover plan clearly describes the activities to be performed months, weeks and days before and after the go-live. In case of a big bang approach the transition has to explain when the legacy systems are being shut off, when data migration has to take place and how the new systems will be ramped up.

The existing risk and issue management structure in the smart greenfield program is leveraged at go-live to help setup and train the organisation to ensure business continuity in

case of a potential disruption. This includes also the setup of an effective support organisation, with adequate support in terms of people and skills, to monitor and ensure fast accurate resolution of problems.

Controlled start & stabilise operations

Typically a controlled start phase will be introduced where the movements within and across the organisational units are kept at a minimum (sales offices, plants, warehouses, etc.). Once the system has been stabilised, the traffic of system activities will be increased so that the throughput can be brought back to a normal level.

In case a staggered go-live approach is planned, interim interfaces need to be introduced to cover the duration where individual cutovers will take place. Irrespective of the cutover approach, a business continuity plan has to be in place to not risk the business activities and to have a fall back scenario in case issues occur.

Ongoing enablement of innovation & growth

Of course, the objectives of the transformation go beyond the implementation of a modern ERP system. The business case of such a large program ultimately rests on the ability of the new business and IT architecture to serve as a platform for innovation, growth and sustainable business performance improvement. For example, with the SAP BTP (business technology platform), future business models and differentiating capabilities can be enabled easier and faster than ever through application development, analytics and intelligent technologies such as RPA and AI, all while maintaining the clean ERP core.

Success story: Smart Greenfield drives significant value for a major global industrial supplier

Business transformation enabled by S/4HANA

In 2017, PwC partnered with a major global industrial supplier to start an S/4 implementation to replace a legacy ERP and enable a business transformation enabled by S/4HANA.

The scope of work included the definition of **strategic ambitions**, the **future operating model** and the global template **design principles** based on S/4HANA opportunities, as well as general SAP S/4HANA ERP conditions (best design for application) based on **SAP Best Practices**

Global Process Design and Prototyping was conducted based on an S/4HANA demo system and validated by the business. Subsequently, the pilot implementation was done in France and Denmark covering Sales, Procurement, Production Planning and Execution, Warehousing, and Finance & Controlling. Further rollouts across Europe have now started and are ongoing.

Achieved Business Benefits

A selection of benefits achieved, based on the defined Design Principles, include:

- **Integrated Planning** - new planning logic starting in Sales and Supply Chain up to Production, including capacity planning
- **New Product Costing & Transfer Pricing Concept** - margin transparency from production to sales
- **Harmonised Sales** - solution based on harmonised sales channels and processes
- **Streamlined Procurement and Purchasing** - optimised procurement functions



Key success elements for the transformation

- **Design Principles** laid down the fundamentals for business mobilisation, as strategic targets were possible to combine with a pure S/4 implementation
- **Agile Global Design** phase defined to include all business strategic objectives
- **Safeguarded go-live in waterfall rollout** most efficient to manage agreed scope
- **New Governance Organisation** established, including:
 - **Change Advisory Board** consisting of all Business Unit Presidents to enable fast decision making
 - **Business Process Owners** who supported the process design within the Global Design phase as well as during the Rollout
 - **Business Process Engineers** and **SAP Competence Centre** to design and develop the defined process



Smart Greenfield will accelerate your business transformation

As evidenced throughout this paper, it is crucial to select the right Smart Greenfield implementation setup and approach from the beginning.

The PwC Success Enablers laid out in the previous pages are seen as consistently important in determining the ability of S/4HANA transformations to achieve their business objectives and expected value. The most successful programs not only embed these into the structure and planning, but continue to revisit, closely monitor and adjust appropriately throughout the full lifecycle of implementation phases.

Many companies have seen great benefit in PwC's service to conduct an initial assessment and concept phase before embarking on their S/4HANA transformation journey. The advantage of defining the expected business value and

focus areas up front helps program leadership to establish business buy-in and transparency around the potential Smart Greenfield transformation roadmap.

Engaging a leading business integrator such as PwC also ensures transformation leaders that they will have the right program oversight, organizational change management and deep business domain knowledge, to complement the technical know-how and migration tools. Critical here is also the experience balancing the green and brown aspects of the transformation and an understanding of the value drivers.

With a Smart Greenfield approach, PwC helps to ensure our clients are consistently achieving their business value goals in their transformation programs.



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