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Nova Intelligence:

Agentic AI Is Changing the Economics of SAP Systems

Modernizing SAP systems and building your own AI platform are the same investment: two sides of one coin!
From left: Emma Qian, Prof. Dr. Alexander Zeier and Sam Yang

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What boards and decision-makers should consider now

Agentic AI Is Changing the Economics of SAP Systems

Why modernizing SAP systems and building a company's own AI platform are now the same investment.

By Prof. Dr. Alexander Zeier, Nova Intelligence

Few cost positions in industrial companies are as large, and at the same time as rarely questioned, as the operation and ongoing development of the SAP systems on which the critical business processes run. For decades the rule was: modernization is expensive, takes a long time, and its business value is hard to prove. With agentic AI, that cost-benefit ratio shifts fundamentally, and with it the question a board should be asking its IT.

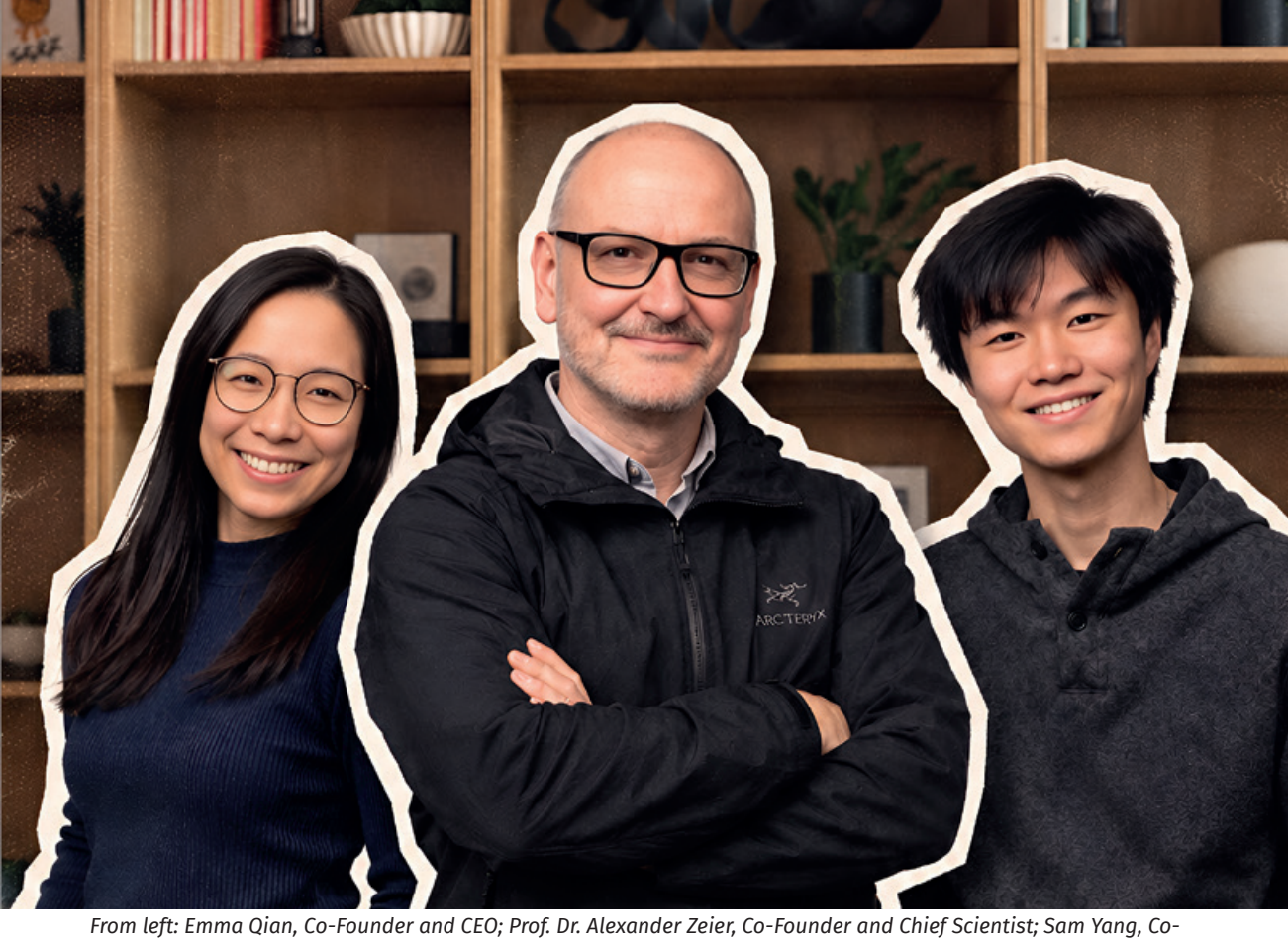
I have heard this, or something very much like it, again and again in recent years: from board members whose SAP program is running away from them for the third time, and most forcefully from a CFO to whom the CIO reports and with whom, for that reason, every escalation lands. This article grew out of that reality. And there is now a way out that does not consist of the next postponement. That is what the following report is about.

How agentic AI makes companies more successful

After two years of experimenting with artificial intelligence (AI), it has become clear in companies which form of AI actually delivers results. It is not the familiar AI assistants that answer questions, summarize documents, and write drafts: useful for the individual, but they change nothing about how the business process runs. It is a new kind of AI system that takes on a task instead of answering a question. Such systems understand the starting situation, plan the steps, carry them out in the company's development environment, check the result, and present it ready for approval: traceable, repeatable, and in hours instead of weeks. What is decisive is that such a system

From the boardroom

A scene playing out in many companies right now: the thoughts of a board member in the night after the steering committee on the SAP transition: "Three years of the same thing. It is taking longer, it is costing another fifty million, and whether I will ever go live with the new system, I do not know. Postponed for the third time, the second project manager replaced. My IT and the consultants are at each other's throats, and in the end none of them is accountable. Except me. I cannot hear it anymore. Neither can my supervisory board."



From left: Emma Qian, Co-Founder and CEO; Prof. Dr. Alexander Zeier, Co-Founder and Chief Scientist; Sam Yang, Co-Founder and CTO, all Nova Intelligence.

handles the task across all roles (functional design, development, basis, testing) that were previously passed back and forth between several specialists. Because it acts like an agent that sees a task through to completion, rather than like an assistant that answers a question, these are called "agentic AI systems." The difference from an ordinary assistant such as a chatbot is the difference between a consultant who writes recommendations and a seasoned, well-coordinated team that fully completes the work assigned to it, with one thing being clear: humans make the final decisions about what goes into production.

Why this makes a company more successful comes down to three reasons, the same three in which competitors differ from one another. First, the speed with which a company responds to the market: a new product, a new sales channel, a new pricing model; all of it must be reflected in the business systems before the company can act on it. Whoever gets there first earns the best margin; whoever comes last competes on price. Second, the cost and risk of ongoing operations: the more capacity operations tie up, the less remains for change, and the less a company has documented and understands the custom code in its systems, the greater the risk of cyberattacks. Third, the knowledge of what sets the company's own business apart: the processes, rules, and exceptions with which a company has distinguished itself from the competition over decades. Agentic AI addresses all three points, because it is deployed where it makes the difference: in the systems with which the company runs its business. That holds for the large-scale modernization just as much as for companies that want to leave their system as it is and simply make ongoing operations faster, more secure, and less expensive.

What this means in numbers has been demonstrated by two world-leading industrial companies that are among the first to work with the Nova Intelligence platform in their core systems and are willing to share their results publicly: Festo, the automation specialist from Esslingen, and the KION Group in Frankfurt, one of the world's largest suppliers of forklift trucks and warehouse technology. The time from

a business requirement to a productive change in the system drops from months to weeks, ongoing operations require a fraction of the previous capacity, and the costs of the transformation itself fall by around half, according to the assessment of experienced consulting firms. The figures for time and capacity are measured, not estimated; every number in this article is derived step by step. And for the result that stands at the end of such a modernization, there is now a name: Cleanfield.

In most German industrial companies, the system with which the company runs its business is called SAP. That is where the processes, the master data, the orders, and the balance sheet reside, and the business logic that defines the company. It is also where the largest budgets of the coming years will be committed, because the old systems are being phased out and modernization is on the agenda of every board, whether it likes it or not. That is why SAP is the place where agentic AI achieves the most.

One prerequisite is underestimated in many companies: agentic AI is only as good as the foundation it works on. It needs the company's data and business logic in digital form, complete and of reliable quality; not in people's heads, not in Excel lists, not in code that nobody reads anymore. Where that foundation is missing, even the best AI delivers nothing more than plausible guesses. That is why every serious deployment begins with the same task: understanding and documenting the existing system completely, so that the agents work on verified facts. For people, this is laborious. It is the first step that an agentic platform takes on itself, and the reason its results are reliable afterwards.

This is exactly what Nova Intelligence was founded for. The company behind the platform in use at Festo and KION provides an agentic AI platform for enterprise systems, for SAP and others. It was founded in Silicon Valley in 2024 by researchers who build AI systems themselves and by the co-inventor of SAP HANA, who initiated the HANA project together with SAP founder Prof. Hasso Plattner and led it as his deputy: the "New Architecture" that became the foundation of SAP S/4HANA. What the platform delivers is clearest in a concrete case: a system that had already been optimized and nevertheless became significantly better once more.

A program that had already been optimized once

At KION, a business-critical logistics process ran on an application that had only recently been developed for S/4HANA and already optimized, and it was still too slow for operational use. The code was known; the team had tried once more to speed it up itself. Only an AI platform that understands not just the code but all the underlying processes in the system found the decisive points of leverage. The result: the program now runs 400 percent faster.

It did not stop at this one case. Across all the tasks that KION's SAP experts have measured since then, they save on average 86 percent of their working time. The root-cause analysis of an incident that used to take around four hours now takes under 20 minutes. Users rate the platform 9.7 out of 10; the recommendation rate is 100 percent.

"Nova Intelligence addresses the two requirements that matter most to us: running truly Clean Core-compliant systems and achieving the development performance our SAP landscape demands," says Carsten Engelbrecht, CIO of the KION Group. "The results were outstanding."

For a CIO, such numbers are a success. For a CEO or CFO, they are more than that: an indication that the cost-benefit calculation with which boards have been deciding about their core systems for twenty years no longer holds.

The investment question, asked anew

The previous cost-benefit calculation went like this: the SAP system is the backbone of the business, and its custom developments, grown over decades, contain the process logic that actually distinguishes the company from its competitors. But modernizing this system, the move from SAP ERP, usually called ECC, to the new S/4HANA product line, has in most cases brought companies no competitive advantage: the same processes, the same logic, only on a new technical platform, for sums in the hundreds of millions. So companies invested as little as possible, postponed the large-scale modernization for as long as they could, and treated it as a cost center. According to a Gartner forecast, just under half of ECC customers worldwide will still not have moved to S/4HANA by the end of 2027. Even those who have begun the move often still run part of their systems on ECC; not out of negligence, but because the classic route via con-

sulting firms is too expensive, too complex, and too risky. Anyone asked to spend hundreds of millions on a program that in the end delivers the same processes to the business as before is right to hesitate.

At the same time, a second question is on the agenda of every board: where do we invest in AI, and where does it pay off? The honest answer in most companies is: we do not know yet. There are plenty of pilot projects and few viable business models. The problem is rarely the technology. It is the knowledge that the AI lacks: the knowledge of how the company actually works; which pricing rule applies to which customer, how a custom production order is scheduled, why a process runs differently in plant B than in plant A.

And this very knowledge sits in one place: in the custom code of the SAP system, grown over decades. That is where companies have mapped what sets them apart from their competitors; as a rule, the essential business logic lives in the SAP system itself.

This knowledge, however, is mostly undocumented. It leaves the company with every employee who retires, and it remains out of reach for any AI as long as it exists only as code. This is where the two questions converge. An agentic AI platform that modernizes an SAP system must first capture this knowledge completely, every process, every rule, every dependency, and preserve it in documented, machine-readable form. What emerges is the core of what the company needs for its own AI: a company-specific knowledge model of its business processes, which belongs to the company alone, grows with every use, and on which the AI applications of the coming years can be built.

That is the new calculation. Modernizing the core systems is no longer the cost center to be pushed ahead of you. It is the strategic path on which a company builds the foundation of its own AI platform, and its value shows from day one in measurable results.

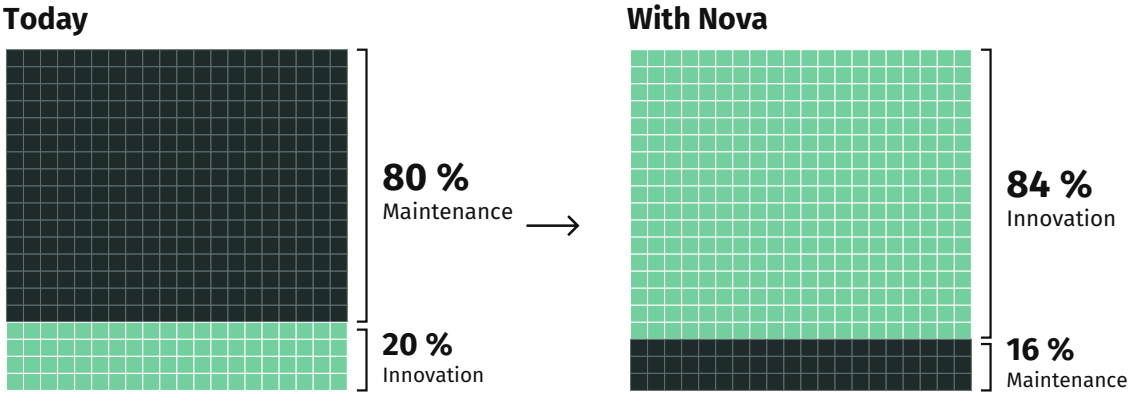
The economics in detail

What does that mean in numbers? Nova Intelligence is now in use at a growing number of customers. Two of them, Festo and KION, use the platform comprehensively in their SAP teams, have disclosed their measured results, and stand behind them with their names. At Festo, the team first collected these figures for its own board, to substantiate the return on investment of the Nova investment.

The first lever: productivity. Festo has worked with SAP since the 1970s and was among the first thirty companies worldwide to introduce the system. Since Nova has been in use in its SAP teams, their productivity across all tasks has increased more than fivefold. For individual tasks the factor is far higher: documentation that used to take three months, for example, is now produced in about a day. Festo's CIO, Dr. Jörn Weigle, puts it this way: "How we answer the three big questions about our SAP program — how long will it take, what will it cost, how big is the risk — has improved significantly since Nova became part of our teams. Our team estimates that it is on average more than five times more productive across all tasks. A capacity gain of this magnitude fundamentally changes the rules of the game for our organization." What such a capacity gain is worth depends on what a company uses it for.

The second lever: cost. The cost effect follows from productivity, in a particular order. The fastest-acting lever is external consultants: any task that the company's own team completes five times faster no longer needs to be bought in. Then comes internal capacity, then the software itself, and finally risk: incidents, outages, and security incidents, which become rarer once a company knows and has documented its custom code completely. For a CFO, one point matters here: a blanket percentage for cost reduction is deliberately not given, because it depends on the starting position; on the volume of custom code, on the share of external consultants, on the number of incidents. What is available are the measured productivity figures from Festo and KION, from which the cost effect for one's own company can be calculated.

The third lever: capacity. This is where the calculation becomes interesting for the board. In a typical SAP organization with a hundred specialists, eighty are responsible for ongoing operations: maintenance, incidents, adjustments, tickets. Twenty work on new processes and requirements from the business. If productivity increases fivefold, as measured at Festo, sixteen specialists handle the same operational load that previously required eighty (16 × 5 = 80). Sixty-four are freed up and join the twenty: eighty-four instead of twenty work on something new; more than four times as many, without a single new hire and without a single additional consultant. That is why Weigle speaks of changed rules



Capacity — 80 percent maintenance today, 84 percent innovation with Nova.

of the game: work that previously lay outside any plan becomes possible.

A lever of its own kind: business and IT at one table. At Festo, "business-IT alignment" is expressly one of the six fields in which the platform is used, alongside modernization, documentation, production support, security, and process design. The greater effect lies not in individuals working faster, but in handovers disappearing. Lead times of months were never months of work: in a classic SAP project, every requirement travels through a chain (business department, functional consultant, developer, basis, testing), and because hardly any requirement is right the first time, it travels through it several times. Over the past twenty years, a large part of this chain has often sat offshore, in another country and another time zone; the people who needed a solution and the people who built it were often not in the same room. Every round cost weeks. With an agentic platform, a result emerges within hours, and business and IT look at it together, change it together, on site, in the same session, as often as it takes until it fits. That is why one developer, or a few, can today deliver what used to require hundreds. The biggest saving lies between the roles, not within them. This far closer alignment also shortens the lead time of a change all the way into production. By how much, the next section shows.

The fourth lever: time-to-market. A team's productivity is an internal measure. How quickly a requirement from the business arrives in the system, by contrast, is the company's time-to-market. According to the values measured at KION, this lead time consists of two phases: understanding what exists and what has to change, which is typically the larger share of the time, and



Festo — six fields of deployment, slide by Dr. Jörn Weigle, SAP Sapphire Madrid 2026.

then building and testing. In the first phase, the effort for analyzing the affected system objects fell from over three hours to around ten minutes; in the second, development effort fell by 80 percent. For the company, this means: a change that used to take five months reaches production in around two weeks; roughly ten times faster, with the same team.

The fifth lever: transformation costs. The largest single item a board decides on in an SAP modernization is the program budget: sums in the hundreds of millions, calculated by strategy consultancies and system integrators on the basis of effort estimates from the era of manual work: weeks for analyzing the existing system, months for redevelopment, test cycles, rework. Precisely these items change when an agentic platform takes over the work. Consulting firms and system integrators that have come to know the platform in customer projects estimate a reduction in transformation costs in the order of 50 percent, depending on the starting position of the company in question, and in individual cases more, and are now planning SAP programs with

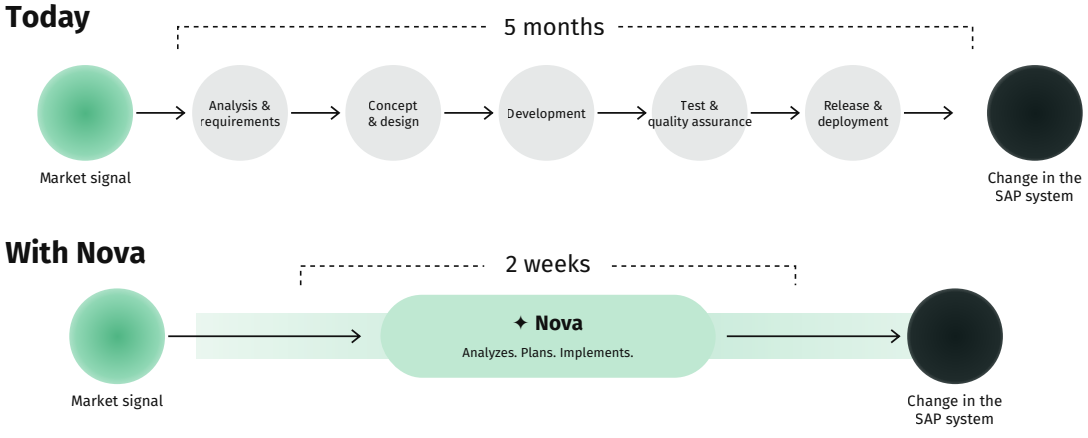


Dr. Jörn Weigle,
CIO,
Festo

the platform. And the first companies that know the Nova platform are making its use a condition in their requests for proposals to consulting firms. How large the saving turns out in an individual case depends on the starting position, on the volume of custom code, and on how many steps of the plan are actually executed with the platform; the body of experience grows with every project. For the CFO, this yields a simple question for anyone who presents a program budget: in which steps does this plan already factor in the cost reduction from an agentic platform, and in which does it still rely on the effort logic of two years ago?

The sixth lever: quality, and with it risk. Every change is created on a fully documented system, follows the company's development guidelines, and is tested before an employee gets to see it. As a rule, it is right the first time. That pays off twice. In day-to-day business: rework, bug fixing in the productive system, and repeated analyses become significantly rarer; in grown SAP landscapes, precisely these activities make up a considerable share of maintenance. And in risk: an error that never reaches the productive system is an incident that never occurs, and if one does occur, the cause is found in minutes instead of hours. Quality is the inconspicuous lever: in no business case does it appear as a line item of its own, and yet it strengthens all the others.

The return on investment. The analysts at PAC have examined what return on investment an SAP modernization with Nova can achieve and, depending on the size and complexity of the



Time-to-market — 5 months today, 2 weeks with Nova.

SAP landscape, arrive at 220 to 1,400 percent; the more extensive and older the custom code, the higher the figure. These numbers capture only the modernization itself. In ongoing operations afterwards, a further saving is added that they do not yet include: total cost of ownership falls sustainably, because the custom code has been reduced to the differentiating business logic and, Clean Core-compliant, uses only the interfaces that SAP will support in future. Every upgrade, every test, every incident, and every new requirement therefore costs permanently less. The benefit of the initial investment thus grows over the years.

Daily savings in ongoing operations

These results are not tied to any transformation program. The platform accompanies the entire lifecycle of an enterprise system, in every phase: understanding the existing system, designing the future processes, implementation, testing, go-live, and ongoing operations. The transformation is one chapter, not the product.

Companies that deliberately want to change nothing, because working processes are not to be touched, benefit as well: better quality in everything new that is developed anyway, faster testing, faster handling of the incidents and tickets that arise every day. How far that can go is shown by the American machine-tool manufacturer Haas Automation: there, the material requirements planning (MRP) run determines what is produced and procured the next morning. When it aborted during the night and had to be rerun by four in the morning, the expert responsible could not be reached. Nova reconstructed the entire run, found the error, and specified exactly how to fix it. CTO Craig Leonard carried out the fix himself, started the run, and it was complete at two in the morning, well before the early shift began. Around 80 percent of customer incidents at Haas are now diagnosed and resolved directly by the platform. “I don’t know how I survived without Nova,” says Justin Zimmerman, SAP Manager at Haas Automation. “I’ve had two careers: one before Nova and one after Nova.”

The rule of thumb: as long as people work on an SAP system, that work can be done more cheaply or faster, or both.

Four metrics a board should demand from its IT

The levers have now been derived. What remains is the question of how a board can tell whether its own company benefits from them. Not from presentations, but from four quantities that every IT department can measure, summarized here once more as the four questions a board should ask its IT, in this order.

Risk. What share of the company-specific code is undocumented, unpatched, error-prone, or lies outside the modern target architecture? Risk in SAP landscapes means not only vulnerabilities, which frequently sit in old custom code, but also program errors, performance problems, and incidents that halt operations, up to and including the process that stops at night and holds up production in the morning. A system that nobody fully understands anymore is a risk, regardless of whether it runs stably. A system that the team fully understands again reverses that: incidents occur less often, because changes are built on a clean basis, and they are resolved faster when they do occur. This quantity does not belong in a return-on-investment calculation; it is its prerequisite.

Capacity. What share of the SAP organization keeps operations running, and what share works on change? Starting position usually eighty to twenty, target picture sixteen to eighty-four; the calculation is above.

Time-to-market. How long does it take from a business requirement to a productive change in the system? That is not the productivity of a team, but the time-to-market of the entire company.

Differentiating business logic. What share of the business logic that actually distinguishes the company from its competitors is documented and also rebuilt with current SAP technology, instead of existing only in the old code and in the heads of those who wrote it?

Cost reduction follows from all four. Anyone who demands these four figures from their IT has a basis for the decision that no vendor presentation can provide.

Two routes to S/4HANA, and a third that only Nova makes possible

All of this has its greatest effect in an undertaking that still lies ahead of many companies: the move to S/4HANA. Which route a company chooses for it is not a technical question; it determines whether the cost-bene-

fit calculation works out. And in precisely this choice, the same pattern has been repeating itself in large companies for years.

Companies know two routes. Greenfield: an empty system, processes as close to the SAP standard as possible, the old custom developments left behind. Brownfield: the existing system is carried over and lifted technically onto the new platform, together with everything that has accumulated over decades.

The typical course of events: a company opts for greenfield because it wants to seize the chance of a fresh start. After three, four, five years it finds that one hundred percent standard is not achievable; because manufacturing has its particularities, because the industry imposes requirements that no standard process covers, because the differentiating business logic is simply too extensive to rebuild manually. Programs into which hundreds of millions have flowed stall; some fail and are shut down, others have to be switched to a different route at short notice. This is no isolated case: several large companies in Germany and in the United States have been stuck for five years and longer in greenfield programs that are not yet live; some have already stopped their programs.

Then comes the pressure: at the end of 2027, mainstream maintenance for the old ECC systems ends, after which SAP charges additional fees, and in 2030 extended maintenance runs out as well. Under this pressure, many companies switch to brownfield. The technical conversion reliably gets them past the deadline, but it is not the simpler solution; it is the more complex one: the old structures remain, maintenance does not get cheaper after the conversion but more expensive, the company has a new system whose custom code still sits on the old data logic, and the actual modernization still lies ahead of it.

That holds as long as brownfield remains what the term has meant so far: a technical conversion. With an agentic platform, the same starting point turns into something else: the existing system is not copied but understood, cleaned up, and brought into the target architecture. The result of a greenfield, with the existing system as the starting point. The new modernization method pioneered by Nova has become established under the name Cleanfield. Nova provides further information on the method at www.cleanfield.ai. The question is therefore no longer greenfield or brownfield, but only: how much of the existing system is carried over, and how much is designed anew? The platform works at every point on this scale, and a company can answer the question differently for each of its areas.

For a CFO there is one argument that brings this decision to the point: brownfield means two programs. The first is the technical conversion. The second, as a rule, follows afterwards, because SAP requires extensions in its cloud models to follow the new architecture model (mandatory in the public cloud, and in the private cloud the yardstick against which all custom code is measured), and because the majority of the grown custom code does not meet these requirements. Whoever chooses brownfield therefore pays first for the conversion and then, under time pressure and with increased complexity, for the actual modernization.

With Nova, two programs become one, because the modernization no longer has to be a project of its own: the platform analyzes the entire code base, maps every function to the S/4HANA standard where the standard covers it, and reduces the custom code to what actually distinguishes the business. There are three ways to get there, and the company chooses, differently for each area if it wishes:

Brownfield — convert first, then clean up. The system is lifted technically to S/4HANA; afterwards, the team uses Nova to clean up and modernize the custom code carried over into the new system. The established route, now plannable with Nova.

Cleanfield — clean up first, then convert. The work begins in the existing ECC system, in its development environment: custom code that is no longer needed is removed with Nova, and the differentiating logic is rebuilt in advance to be S/4HANA-ready. The technical conversion remains a separate step afterwards, but it carries over a system that has already been cleaned up, not one complete with legacy baggage. The new route that only Nova makes possible.

Greenfield — build anew, keep the knowledge. The processes are designed anew, and Nova builds only the delta of custom code that actually distinguishes the business. Because the platform understands the business logic of the old system, not just the code, it can transfer this logic even when the processes in the new system are designed differently: what distinguishes the company is not lost, even if it will run differently in future. The established route, with Nova and

without loss of the company's differentiating business logic.

In all three cases, two separate programs with two budgets become one coherent, plannable path: faster, lower in risk, and with a system that is more modern and more secure in the end. Brownfield and greenfield remain the familiar routes, but with Nova they are agentically supported and thus lead closer to the Cleanfield result. The fastest way to reach it is the new route, in which the system is cleaned up first and then converted. Weigle, who first saw Nova in Kreuzlingen a little over a year ago, put it this way from his perspective: "Had Nova Intelligence been available to me earlier, I would have done S/4HANA migrations differently."

In fairness: compared with a minimal brownfield migration, in which the system is lifted onto the new platform unchanged and just barely operational, this route is not cheaper in the project. But it replaces two programs with one, because the modernization does not follow as a second undertaking. And it shows its advantage over the lifecycle: in the years that follow, the company operates a system it understands, instead of one it has inherited. And where a company has already converted, or chooses brownfield for good reasons, the same applies: the platform takes on the clean-up, the documentation, and the modernization of the interfaces, and delivers from day one the productivity and quality gains this article describes. The path to a fully understood, modern system is open from every starting point.

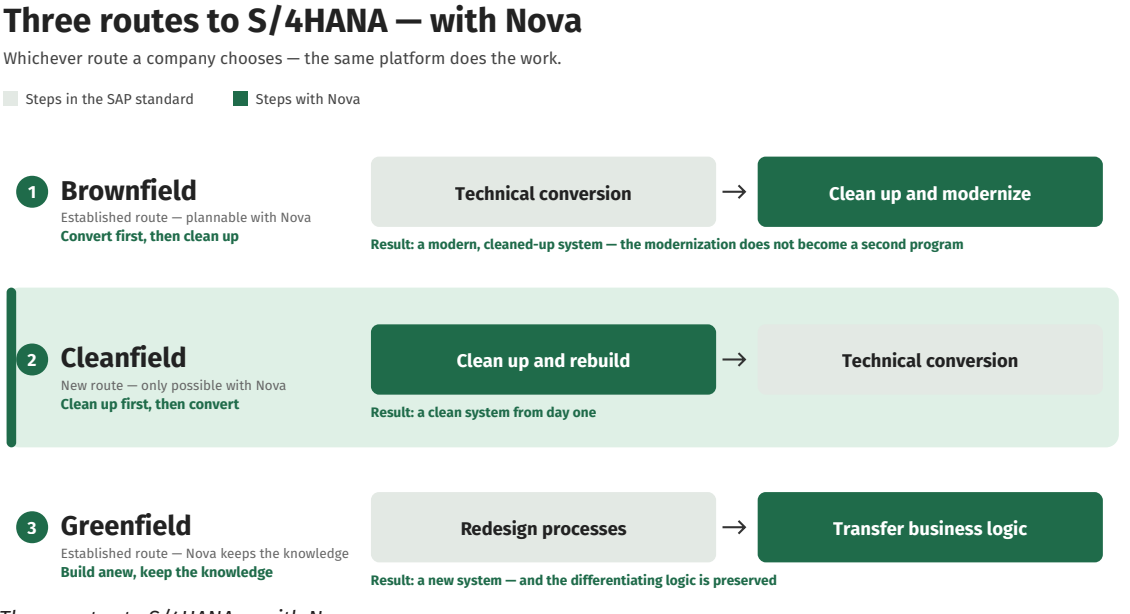
Five success factors for deploying Nova

The technology is the smaller part of the decision. The larger part is the question of how a company organizes itself so that the cost-benefit calculation works out. From the experience of the first adopters, five success factors can be read.

Business and IT work on one platform. The classic break in SAP projects runs between the business department, which describes what it needs, and IT, which implements it. A platform that documents the existing process in an understandable form gives both the same language: the process owner sees what the system does today, the business department shapes the target state, the developers implement it.

Capacity is deliberately reallocated. The gain from fivefold productivity does not materialize on its own. A company must decide what it does with the capacity that is freed up: work off the backlog, accelerate the transformation, reduce consultants, take on new requirements from the business, drive innovation. Whoever does not decide ends up with a more productive team, but no changed cost structure.

The architect's role is upgraded. After the CIO, the enterprise architect is the most important role in the SAP organization: the



Three routes to S/4HANA — with Nova.

person who decides what becomes standard and what remains differentiating custom code. With a platform that prepares and substantiates this decision for every function, the architect's work shifts from searching to deciding.

Governance is integrated into the process. KION has brought its own development guidelines into the platform; a quality gate before every release into production is planned. Festo has uploaded its coding guidelines, and the platform applies them when generating code. This is the unspectacular part that is decisive for the board: the platform works in the customer's development system all the way to the tested, transport-ready result; the release into production remains with the customer.

The proof of value. The entry does not begin with a limited functional check, as is customary in a proof of concept, but with a comprehensive proof of value: the customer uses all functions of the platform on its development system. Within the first month, the productivity gain becomes visible, and on that basis the company decides on further deployment.

What connects these five success factors: they presuppose that the team embraces the platform. Weigle on this: "There were no reservations on the part of the developers involved, quite the opposite: the team is convinced by the platform because it frees up resources for other, more urgent tasks." And elsewhere: "My SAP team uses Nova as its main tool. It is one of the first things they open in the morning and one of the last they close in the evening." At KION, Saber Lamine, SAP Solution Architect, describes it this way: "It feels like we've hired an entire additional team of capable colleagues."

Why a generic AI assistant is not enough

The obvious question from the board is: why does this require a specialist provider, when generic AI assistants are available everywhere? The answer has two levels. SAP is a proprietary ecosystem with its own programming language, its own data models, and decades-old custom developments; an off-the-shelf language model does not understand this depth. And even if it did: no responsible company connects an unsecured AI model directly to the system that pays the salaries, controls production and logistics, produces the month-end close, and forms the basis of financial reporting. It takes the platform behind it: authorizations, control, traceability, and the guarantee that the company's knowledge stays with the company and is not used to train third-party models.

The scale of the task can be read from SAP itself: even the vendor needed more than a decade to rebuild its own, fully known standard code on the HANA architecture; not out of negligence, but because the task is that big. At customers, 30 to 40 percent and more of custom code comes on top, which nobody but they know. That this task cannot be done manually, the industry has long known. That it can be done with agentic AI, the customers have been demonstrating for a good year.

The closeness to SAP is remarkable: the group holds a stake in Nova through its investment arm SAP.iO, and the solution is listed in the SAP Store, the marketplace on which SAP carries only partner solutions that it has vetted and approved for its customers, and which SAP's own sales force draws on when it recommends complementary solutions to customers. The logic is simple: Nova achieves exactly what SAP wants as well: customers who arrive faster and with fewer resources on a modern S/4HANA basis. In doing so, Nova complements SAP's own AI initiative, Joule. Joule is aimed at end users and is available above all in SAP's cloud environments; for ECC, SAP is now opening it to customers who have set out on the path to the cloud. Nova concentrates entirely on the teams that build, change, and operate the system, and it works directly on ECC as well, which the majority of SAP customers still use today, in mid-sized companies as well as in global enterprises. Several ECC systems can be connected at the same time and linked with a new S/4HANA system.

Three architectures, two worlds, one team

Nova Intelligence was founded in Silicon Valley in 2024 and had raised 40 million dollars in funding by May 2026. What distinguishes the company from other AI vendors is the combination of two worlds of knowledge that rarely come together, and the experience of not just using platforms but building them.

Co-founder and CEO Emma Qian comes from Google DeepMind and Meta AI, where she developed AI systems herself. Co-founder and CTO Sam Yang had previously built a financial application with more than two mil-



From left: Emma Qian, Prof. Dr. Alexander Zeier, Sam Yang. On e3mag.com: the May 2026 cover story on Nova Intelligence, agentic AI, SAP Clean Core, and brownfield versus greenfield versus Cleanfield.

lion users before co-founding Nova. Co-founder and Chief Scientist Prof. Dr. Alexander Zeier has worked with SAP systems since 1992, when R/3 was new on the market, and in that time has helped build two architectures that changed how companies work. The first was APO, SAP's solution for supply chain management: from 1998, first in his doctoral thesis and then as product manager, he helped lead it to global market leadership over seven years. The second was HANA. In April 2006 he started the HANA project and led it until 2012 as Hasso Plattner's deputy: the "New Architecture" that brought all enterprise data into main memory and for the first time united transactions and analytics in one database. Eight granted patents name him as co-inventor of the HANA platform together with Hasso Plattner; the book they wrote together became the reference work on the technology. HANA is today the foundation of S/4HANA and thus of every system this article is about. After that he was responsible for S/4HANA transformations at Accenture for more than eleven years, more than seven of them as Global CTO of the world's largest SAP practice with 85,000 consultants: hundreds of transformations, not a single failed project. Nova is the third of these architectures, and the one with the greatest leverage: APO made the planning model shareable, HANA the data, and Nova the company's knowledge, and turns it into results.

The leadership team also includes Chief Customer Officer Justin Kershaw: ten years at Cargill, the largest privately held company in the United States with around 165 billion dollars in revenue, responsible for the global SAP program from 2014 and, from 2015, as CIO. In that time he modernized one of the largest SAP systems in the world, and he knows the decision at issue here from the perspective of the person who had to make it.

How innovation leaders are already using Nova today

The companies in this article have one thing in common: they are among the innovation leaders who use the latest technology earlier than others. That pays off. Whoever deploys agentic AI in their SAP landscape today is more flexible, has the more capable systems, and can respond faster to change. At Festo, the productivity of the SAP teams across all tasks has increased more than fivefold. At KION, the SAP experts save on average 86 percent of their working time across all measured tasks, and a business-critical application that had already been optimized now runs 400 percent faster. At Haas Automation, around 80 percent of customer incidents are now diagnosed and resolved directly by the platform.

Fresenius, a DAX-listed healthcare group, is driving a multi-year corporate transformation to standardize processes, reduce the complexity of legacy systems in its IT landscape, and move to SAP S/4HANA. Nova Intelligence supports aspects of the transformation through its AI platform.

How the two established routes, brownfield and greenfield, can be combined in a new way is shown by a concrete case: ZEISS. The company is the sole

supplier of the optics for ASML's EUV lithography machines, without which no modern AI chip can be manufactured. Whoever supplies the foundation for the AI industry has good reason not to leave the foundation of its own AI platform to chance. ZEISS deploys Nova across its entire SAP program and uses the full breadth of the platform. In areas whose processes change only a little, the existing system becomes the starting point and is modernized with Nova. Where the business is being fundamentally redesigned, the same platform takes up the new process design and builds only that part of the custom code that actually distinguishes a company like ZEISS. That is the answer to the question of how much of the existing and how much of the new: different for each area, with one platform.

"After an extensive pilot phase, we committed to a multi-year deployment of Nova's agentic AI platform because it makes our SAP modernization to S/4HANA faster and more cost-efficient and at the same time makes our ongoing operations more secure and more reliable," says Carsten Trapp, CIO of the ZEISS Group. "More reliable, because we resolve incidents in operations faster. More secure, because Nova finds vulnerabilities across the entire SAP system and we can close them immediately, before they become a risk. That is particularly important for us, because in semiconductor and medical technology ZEISS is subject to very high security requirements. In the modernization we combine greenfield and brownfield in a novel way: depending on the area, we modernize the existing system or redesign the processes, with the same platform. This approach is becoming established in the market under the name Cleanfield, and we are among the first companies to deploy it comprehensively. What is decisive for us is that Nova does not stop at documentation: the platform makes the existing processes understandable for business and IT, generates the code, tests it, and presents it to our employees for final review. The decision on deployment is ours. That is why we now use Nova more broadly than planned. Beyond that, we are building our AI knowledge core with Nova: the documented knowledge of the business logic that sets us apart. That is an investment in the future of ZEISS."

Behind this approach lies a point that gets too little attention in many board discussions: it is not the technology that decides competition, but process design; how a company shapes its workflows, how quickly it can change them, and whether the system is a tool or an obstacle in doing so. A platform that takes up new process designs directly and brings them into the system puts the design of the processes themselves into the board's hands.

Weigle of Festo has put it in a nutshell: had he had Nova earlier, he would have set up his S/4HANA migrations differently from the start. Whoever begins today can do exactly that.

What distinguishes Nova from other solutions can in the end be said in one sentence: the platform understands a company's grown custom code and the process logic of SAP at the same time, and only both together make it possible to reduce the custom code to the business logic that actually distinguishes the company and to rebuild it in the modern target architecture. That holds across the entire lifecycle, from understanding to ongoing operations.

For boards, the topic thus comes down to a decision that has little to do with technology. Operating and developing the core systems is one of the largest cost blocks a company can influence itself, and the only one in which a single investment simultaneously lowers costs, accelerates the business, and creates the foundation for the company's own AI. Whoever does not yet want to modernize gains with the same platform in ongoing operations: with every ticket, every incident, every test. And the four metrics by which the success of this investment can be measured, every IT department can deliver tomorrow.

Which brings us back to the board member from the sleepless night. The investment at issue is his responsibility; not his IT's, not his consultants'. What has changed for him is the answer he can get in return for this investment: more result for the same money, less risk, and a company that adapts its systems to the market faster than the competition. At the next steering committee, he can demand the four metrics. For the first time in three years, the answer will then not be the next postponement, but a decision he makes himself. ■



Prof. Dr. Alexander Zeier,
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Cover Story

“Agentic AI Is Changing the Economics of SAP Systems” by Prof. Dr. Alexander Zeier, Nova Intelligence. Cover story of the Manager Magazin · E3 Supplement, November 2026.

This is the English edition of the cover story, translated from the German original as printed. E3 Magazine also publishes the article online in English, German, Spanish and French:



e3mag.com/en/agent-based-ai-is-transforming-the-economics-of-sap-systems

More details in the E3 cover story of May 2026 on Nova Intelligence:

- Return on investment of up to 1,400 percent: the calculation by the analysts at PAC. “SAP Custom Code rethought”, Joachim Hackmann and Dan Bieler, PAC
- “Agentic AI Platform for SAP”: Clean Core, Brownfield versus Greenfield versus Cleanfield. Peter M. Färbinger, E3 Magazine
- “Cleanfield: How AI is reshaping the SAP world”. Prof. Dr. Alexander Zeier, Nova Intelligence



e3mag.com/en/category/cover-stories/coverstory-26-05

More about Nova Intelligence, the latest customer results and success stories, including Festo, KION and Haas Automation:



www.novaintelligence.com/case-studies