

The background image shows two workers in safety gear (yellow hard hats, high-visibility vests, and tool belts) walking across a roof covered in solar panels. In the distance, several wind turbines are visible against a clear blue sky. The overall scene is a clean, professional industrial setting.

alteryx

Transforming with Data: The Siemens Energy Analytics Journey

Discover how Siemens Energy becomes a network of smart factories and how you can do the same.

Tim Kessler didn't set out to create a digital transformation movement that would substitute hundreds of thousands of manual working hours and create a network of smart factories, but what began with a desire to make data more automated and accessible soon became the foundation for one of the company's most remarkable success stories in digital empowerment and data analytics..

Today, Siemens Energy's technology generates approximately 17% of the world's electricity. Their team of 99,000 employees is energizing society in over 90 countries, but doing so requires a massive amount of data processes — and harnessing this is no simple feat.

Before Alteryx, Siemens Energy's operational businesses and classic Excel users were drowning in manual work. "There was no widespread data analytics. It was just crunching data," said Tim Kessler, Head of Data, Models & Analytics and Corporate Business Lead for Citizen Development. "We were tied up in spreadsheets, spending all our time consolidating data, checking it was valid, and ensuring our formulas were working properly."

But Kessler and his team, together with other powerful data enthusiasts and passionate spearheads, saw an opportunity to transform the processes across Siemens Energy by increasing data literacy and making it more accessible. "If we want to improve sustainably, we need to build knowledge ourselves," Kessler said.

Today, Siemens Energy has automated over 700,000 manual working hours in the span of just a few years, and they have their eyes set on hundreds of additional analytics automation use cases. With over 2,500 Alteryx users and 450 automated data solutions, they run an intelligent data infrastructure that spans continents. But the real story is how they got there.



Tim Kessler

Head of Data, Models & Analytics and Corporate Business Lead for Citizen Development
Siemens Energy

generates

17%

of the world's electricity

99K

employees

90+

countries

700K+

equivalent manual hours
substituted

2.5K+

Alteryx users

450+

automated data solutions



Powering Innovation Through People

The team's journey from helping with individual use cases to providing intelligent, real-time dashboards and the broad adoption of AI and LLMs among the workforce started with a concept Kessler calls "Citizen Development," the foundation of their Analytics Process Automation (APA) movement.

"Citizen Development means enabling people who are not traditional coders to build process and data solutions," Kessler said. "The goal is to make things more transparent, accessible and easy to use, so everyone can understand them." Citizen Development, Siemens Energy's practice of increasing data literacy and teaching people how to use low-code tools, began with one team acting as Center of Excellence and catalyst until it caught on and spread throughout the organization.

The real magic happened, Kessler said, "when people from different backgrounds — marketing, operations, and even HR — started using digital tools to improve processes." And when those employees shared their results, it inspired others. "Success stories are contagious. If someone says, 'Hey, I built this, and it made my work easier,' others will follow."

At the heart of this movement was Siemens Energy's people and a tireless spirit of innovation. "You need individuals who are curious, who want to learn and contribute," Kessler said. "It's not just about technology. It's about a cultural shift. We have a lot of use cases where progress depends on individual initiative. If someone says, 'I don't understand this' or 'I can't do that,' then it becomes a blocker. We have to encourage people to step up and explore."

To enable their Citizen Developers, Kessler and team made sure to give employees access to the right tools, time to learn, and plenty of unlimited support and encouragement. "They had a certain freedom to try things out without fear of failure."

Another critical part of success was their internal community and award-winning Citizen Development ecosystem¹, "where people can share what they've made, ask for help, and learn from others. That sharing culture is key in combination with proper orchestration and a solid operating model to finally ensure a high level of scalability. It's how you make this a sustainable movement."

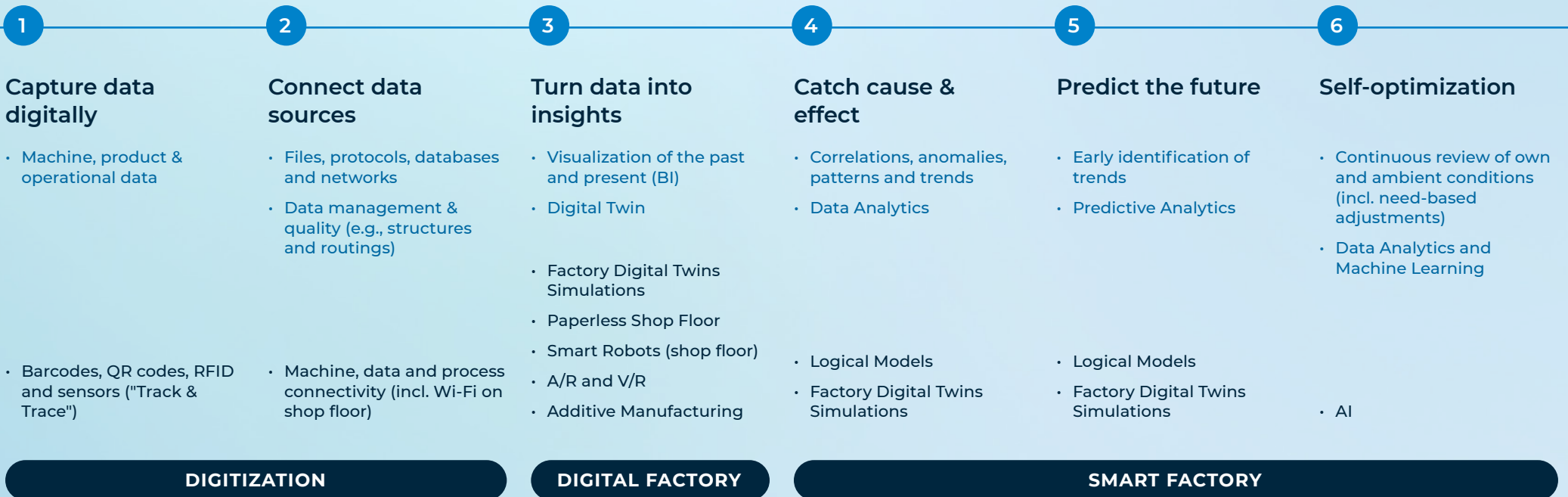
Today, the Citizen Development movement has enabled a bottoms-up approach to innovation where every individual is empowered to effect change. However, access to powerful tools — like low-code, no-code analytics platforms — and the knowledge to use them have little business effect without access to data.



¹ Alteryx Maveryx Customer Excellence MVP Award 2023 for "best-in-class analytics enablement initiatives" and community engagement program.



The 6 Step Approach – 6 Steps to Become a Network of Smart Factories



Opening the Data Vault With the SE SAP Data Center

The SE SAP Data Center gives employees direct access to near real-time data without needing to file a request or export huge reports. It's essentially an Alteryx macro connected to Snowflake that replicates raw SAP data up to every 20 minutes. Before the data center's creation, there were numerous roles dedicated solely to updating data rather than analyzing it or generating any kind of business insights.

"This was the critical turning point to dramatically reducing manual efforts and to boost the scalability of any data solution," said Max Johann, a Senior Domain Data & Process Analyst on Kessler's team. "The SE SAP Data Center plays a vital role in our data democratization and data literacy concept as it enables users to access fresh data based on appropriate permission systems and build their own solutions for their individual business processes."

To help with scalability and governance, Siemens Energy also implemented a straightforward but effective security model. "We have a row-level security permission installed," Johann said, "which means that only colleagues who need to access the data will have access." This governance framework helped maintain trust while supporting broader adoption across the organization.

The combination of the Citizen Development movement with the SE SAP Data Center is what helped Kessler's team scale their analytics solutions from one use case to hundreds. And it all started with a few small wins.



Max Johann
Senior Domain Data & Process Analyst
Siemens Energy



The Alteryx Effect: Scaling From One Use Case to Hundreds

In 2020, when Siemens Energy only had 100 Alteryx licenses, the analytics team handled requests individually. One of their first major breakthroughs started with a particular request from an operational buyer.

Operational buyers had to manually identify pending purchase orders or purchase orders with missing information, draft reminders to suppliers, and email them individually — a routine task without value add and endlessly complicated and time-consuming by the scale of Siemens Energy's operations, which involved hundreds of suppliers and thousands of purchase orders. The colleague who reached out to the data team was spending hours a week just crunching data and drafting emails.

So the data team built an automated analytics solution that analyzed raw SAP data, identified all the missing PO items, and automatically drafted and sent emails to the suppliers. The colleague was thrilled.

He had eliminated all the manual data prep and hours of writing emails each week. Word spread throughout his team, and shortly after, one of his teammates asked, "Can you help with overdue delivery?"

The workflow creation process started anew, and the team created a new automated workflow that, again, saved hundreds of hours. This cycle continued until the data team decided to focus on the big picture — the end-to-end procurement process chain. This was the inception of the Procurement Cockpit.

The Procurement Cockpit

The Procurement Cockpit is the crown jewel of Siemens Energy’s digital transformation in procurement. It’s an end-to-end dashboard suite — powered by Snowflake, Alteryx, and Tableau — that provides real-time visibility into the entire procurement lifecycle.

“For each main step in the procurement process, from the initial demand to goods received, we have a tailored solution for our network of factories, all supported by Alteryx,” said Ana-Maria Cuciuc, another Senior Domain Data & Process Analyst on Kessler’s team. “It’s a powerful, high-end visualization tool in Tableau that brings transparency, efficiency, and helps with data-driven decision-making.”

From demand analysis and requisitions to order confirmations and goods received, each stage has its own dashboard, powered by Alteryx workflows and live SAP data. It replaces dozens of manual reports with a single intuitive interface that operational buyers — or Citizen Developers — can access to identify overdue items, evaluate supplier responsiveness, and plan for incoming deliveries, all at a glance. Even better, the Procurement Cockpit automatically sends out 600 emails every week and helps with SAP data hygiene, proactive monitoring, and enriched analysis.

Today, the Procurement Cockpit is a strategic, time-saving engine that runs across 20+ factories, four continents, and nine countries, substituting over 150,000 manual hours annually. Because scalability and co-creation between technical and business users were at the heart of this project, the team now has a blueprint for future success and untold efficiency gains as more factories and departments adopt and repurpose this solution.



Ana-Maria Cuciuc
Senior Domain Data & Process Analyst
Siemens Energy



USE CASE	BUSINESS PROBLEM SOLVED	IMPACT
Demand Analyzer	No real-time visibility into critical materials based on stock levels.	Identifies materials below safety stock or over reserved stock to help prioritize replenishment.
Open Purchase Requisitions (PRs)	No clear prioritization of PRs by urgency or date.	Categorizes purchases by criticality (red/orange/green) and by project and delivery date to help prioritize
Pending Order Confirmations (OCs)	Manual follow-ups to suppliers due to a lack of visibility.	The “OC Expediter” workflow flags pending POs or POs with missing information and automatically sends emails to suppliers.
Overdue Deliveries	Difficult to monitor delivery delays.	Tracks overdue POs, partial deliveries, and trends.
Expected Goods	Poor forecasting of inbound deliveries.	Gives visibility into all expected deliveries and allows for filtering by purchase order, purchasing group, and delivery time.

From Automation to AI: Unlocking Smarter Efficiencies

Siemens Energy substituted hundreds of thousands of manual hours through its procurement use cases, but it's already using AI to power more solutions and new efficiency gains — all powered by an impactful symbiosis of easy-to-adopt, tried, trusted, flexible, and scalable technology, and the innovative, passionate gist of Citizen Development — the inherent domain expertise, business proximity, focus, and collaboration. It is boosting time to market, shortening innovation cycles, delivering cost-efficient end-to-end solutions, and enabling sustainable scaling.²

One of the team's most powerful use cases is AI-powered document intelligence. Siemens Energy has thousands of technical documents, manuals, handwritten notes, and other non-digitized documents. Reading through these 723,000 pages of documentation would take an employee over 36,000 hours of full-time reading — more than four years per person.

By integrating Alteryx with the Snowflake data platform and LLMs, Siemens Energy has developed an AI-powered chatbot that enables users to query extensive document repositories. The AI-powered solution even provides direct linking to the original documents in case users want to verify or further explore any answers.

This solution was also built to scale, so naturally, new use cases opened. What started as a specific application in R&D is now being used across different domains. On top the underpinning AI features were taken to the breeding ground of Citizen Development, unlocking LLM capabilities for all Alteryx users in Siemens Energy to fuel innovation and to push the overall AI adoption.³

²Snowflake Data Drivers / AI Innovators Award 2024 for the innovative, fast, scalable and sustainable implementation of GenAI (e.g. chatbots) in Siemens Energy.

³Alteryx Customer Excellence Award 2025 for Ingenuity, implementing LLM functionalities at scale into the Alteryx ecosystem to automate business processes and to revolutionize the way of problem solving.



Alexander Gross

Curator Alteryx Server, Alteryx ACE, Alteryx Customer Excellence Award Winner 2025, Siemens Energy



Tony Adams

Curator Alteryx Server & SE SAP Data Center, Alteryx Visionary, Alteryx Customer Excellence Award Winner 2025, Siemens Energy

Lessons From the Journey: 5 Takeaways to Aid You in Your Analytics Transformation

No transformation story is complete without roadblocks, and Siemens Energy encountered plenty. As with any ambitious digitalization effort, success didn't come from their powerful tools alone but from their people and their passion for innovation. Here are several of the roadblocks they faced, how they overcame them, and how you can apply these lessons to your own transformation.

LESSON 1: DATA QUALITY – MAKE IT A SHARED RESPONSIBILITY

One of the earliest and most persistent challenges was data quality. “If the data quality does not reach a certain level, we cannot trust our dashboards,” Johann said. To overcome this, the team embedded validation steps directly into workflows and involved key stakeholders in the data quality and integrity process from day one. By showing stakeholders the value of maintaining clean SAP data, they created a culture where data quality became everyone's job — to everyone's benefit.

Takeaway: Involve business users early. Don't treat data quality as a task reserved for the data team. Make data validation a regular practice, and clearly communicate the benefits of clean data and trusted outcomes to everyone, for everyone.



“All of this wouldn't be possible without a cooperative approach and passionate people who are eager to innovate. Our success is driven by the collaborative efforts.”

Ana-Maria Cuciuc, Senior Domain Data & Process Analyst, Siemens Energy

LESSON 2: CROSS-FUNCTIONAL COLLABORATION – BUILD SOLUTIONS TOGETHER

Many teams worked in silos, all with different systems, processes, and priorities. The data and analytics team made it a point to co-create every solution with end users. “From the beginning of the development, we had in-person meetings and online follow-ups. We were always looking for feedback,” Cuciuc said. “It wasn't just one piece of feedback. It was the repeated and honest feedback from end users that really made the difference.”

The team constantly listened, adjusted, and iterated. A huge theme was co-creation. In the end, Tim and his team understood that success was not just about dashboards, automation and technology — it was about partnership, trust and people. “You can have the best product in the world, but if your counterpart is not convinced, it will most likely fail,” Johann said.

Takeaway: Make end users a part of the creation process, a part of your development team. Schedule regular check-ins, run your ideas by them, and make them feel like their input is valuable — because, truly, it's invaluable.



LESSON 3: CULTURAL CHANGE – LEAD BY EXAMPLE AND CELEBRATE SMALL WINS

Early on, many were hesitant to embrace new workflows or ways of working. The data team led by example, using small, meaningful wins to build trust and momentum. Their Order Confirmation (OC) Expediter workflow inspired more use cases, and this cycle continued until an undeniable transformation took place.

“It’s about empowerment and trust,” Kessler said. In the future, the team’s goal is to make Citizen Development “as normal as using email, just another way to solve problems and improve your work.”

Takeaway: It’s not practical — or even possible — to push a huge cultural shift overnight. Start small, show value early on, and celebrate every win. Success is contagious. Your culture will gradually shift with each win, turning into something new and powerful.

LESSON 4: GOVERNANCE – BALANCE INDEPENDENCE WITH GUARDRAILS

Finally, the team needed to tackle governance challenges, especially with the scope of the SE SAP Data Center. To avoid confusion or chaos, Kessler’s team built an internal Citizen Development ecosystem (including community, operating model and infrastructure) where users could share knowledge and ask for help.

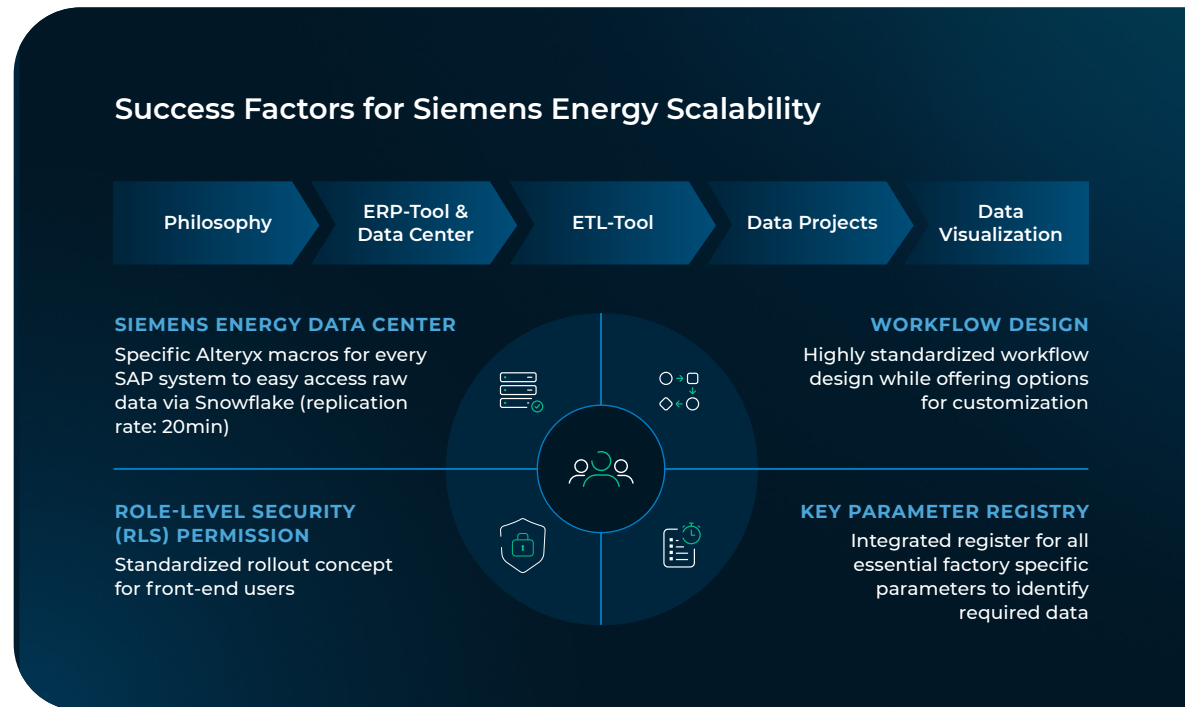
They also created reusable templates, standardized workflows, and a centralized use case register, giving teams across factories self-service access to data and use cases while maintaining data integrity and security.

Takeaway: Give users the data access they need to find meaningful insights, but give them clear, standardized frameworks, processes, and workflows to work within. Governance is about striking the right balance between personal empowerment and data security.

LESSON 5: BUILT TO SCALE – PLAN FOR GROWTH FROM DAY ONE

From 100 Alteryx users to over 2,500, from one-off use cases to hundreds, Siemens Energy was intentional about scaling from the start. Many workflows and solutions built had scalability in mind. Whether it was using more data, different data, or empowering new use cases, the underpinning solutions were built to endure.

Takeaway: Design your solutions to scale. This should be your top priority. Invest in automation, training, and co-creation, and in turn, you’ll empower not just more users but also infinitely more use cases.



The Future of Analytics at Siemens Energy

In just a few years, Siemens Energy went from 100 Alteryx users to over 2,500. Their procurement solutions substitute hundreds of thousands of manual hours annually, sends hundreds of automated emails weekly, and is used in over 20 factories across 4 continents and 9 countries. The data community has built over 450 automated data solutions with Alteryx, and they have hundreds of use cases in the pipeline. Their initial AI solution has saved over 36,000 hours — or four years of full-time reading per person — and on top they unlocked LLM capabilities for all Alteryx user in Siemens Energy to push overall AI adoption.

And it all started with a handful of innovators, a mindset shift, a push for data literacy and global digital empowerment, and a vision to broaden access to state-of-the-art technologies and high-quality data. Siemens Energy is now positioned to become not just a network of smart factories but a network of empowered Citizen Developers.

“We want to enable even more people to participate,” Kessler said. “It’s about inclusion and expanding the movement, building a culture and DNA where everyone sees themselves as part of the digital transformation. Not just the IT department, but every team, every role.”

Looking forward, Kessler is especially excited about AI tools and low-code platforms because they lower the barrier to entry and allow people to experiment. “That’s what drives innovation.”

For companies looking to start their own digital transformation journeys, Kessler advises starting small but making sure to start. “Don’t wait for the perfect plan. Begin with a pilot project, find your allies and champions, and let the momentum grow from there. But at the same time, do yourself the favor and be ready to foster the generated demand and growth. And remember this, the final boss enemy in transformation is culture and organization.” And to individuals, he advises, “Be curious, ask questions, and challenge the status quo. You don’t have to be an IT expert to make a difference. Domain expertise often prevails IT skills. But YOU need to take the first step.”

2.5K+

Alteryx users

450+

automated data solutions

600+

automated emails weekly

4+

years of full-time reading saved



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