

German Chancellor Angela Merkel with Chief Operating Officer and member of the SAP SE Executive Board Christian Klein at Hannover Messe 2019

Experience Industrial Transformation First-Hand

At Hannover Messe, SAP offered exciting insights into the future of industry



Ina Schlie

Armed with artificial intelligence, the Internet of Things (IoT), machine learning, blockchain technologies, and analysis tools, the industry is preparing itself for the digital future. Visitors to this year's Hannover Messe had the opportunity to find out what this might look like in practice, as the world's biggest industrial tradeshow set itself the goal of enabling

people to experience the transformation of industry for themselves. In tune with Hannover Messe's central theme "Integrated Industry – Industrial Intelligence", exhibitors showed how the digital connection of people and machines functions in the age of artificial intelligence.

SAP's presence this year focused on getting visitors to know the industrial future up-close and bringing the term "industrial intelligence" to life. The benefits of harmonizing automation technology, intralogistics, IT platforms, and artificial intelligence were also demonstrated. Under the slogan "The Power of Digital"

Supply Chain and Intelligent Technologies", the SAP booth gave exciting insights into the future of smart production. Visitors could follow the production process step-by-step and witness the benefits of a seamlessly integrated digital supply chain from design to operations.

In this edition of our political briefing, we would like to look back on this exciting and inspiring event with you!

Sincerely,

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Ina Schlie

Senior Vice President Digital Government -Head of Government Relations MEE



New Solutions for Industrial Intelligence at the SAP Booth at Hannover Messe

Prominent visitors impressed by SAP's live demonstrations

At this year's Hannover Messe from April 1 to 5, visitors to the SAP booth experienced for themselves how digital networks will shape the future. The "Design to Operate" showcase displayed the strengths of smart technologies – from product design through planning, production, and logistics to operations. Startups such as 4tiitoo, Kinemic, Arkite, Serva Transport Systems, Daqri, and Quadrica, plus another 25 partners, contributed their expertise to developing the showcase to demonstrate how manufacturing processes can be optimized from start to finish.



From left to right: Minister-President of the German Federal State of Lower Saxony Stephan Weil, Germany's Federal Minister of Education and Research Anja Karliczek, German Chancellor Angela Merkel, Prime Minister of Sweden Stefan Löfven, and Chief Operating Officer and member of the Executive Board of SAP SE Christian Klein

German Chancellor Angela Merkel was among the visitors to the SAP booth on the first day. Christian Klein, Chief Operating Officer and member of the Executive Board, SAP SE, showed how artificial intelligence makes business processes smarter and more automated in the factory of the future and how manufacturers can use Industry 4.0 technologies to achieve seamless integration, further strengthening collaboration and transparency between all areas, from design through operations. The Chancellor also



Peter Altmaier, Germany's Federal Minister for Economic Affairs and Energy, at the SAP booth

learned about a solution that helps improve the inclusion of people with disabilities. This co-innovation project between SAP and Munich-based startup 4tiitoo enhances SAP applications with gaze control options, whereby artificial intelligence is used to translate eye movements into program commands.

Other prominent guests at the SAP booth included the Prime Minister of Sweden Stefan Löfven, Germany's Federal Minister for Economic Affairs and Energy Peter Altmaier, Germany's Federal Minister of Education and Research Anja Karliczek, Germany's Minister of State for Digitalization Dorothee Bär, European Commissioner for Budget and Human Resources Günther Oettinger, Minister-President of the German Federal State of Lower Saxony Stephan Weil, Member of the European Parliament Reinhard Bütikofer, Minister of Economic Affairs, Labor, and Housing of the German Federal State of Baden-Württemberg Nicole Hoffmeister-Kraut, Minister of Digital Strategy and Development of the German Federal State of Hesse Kristina Sinemus, and Singapore's Senior Minister of State for Trade and Industry Koh Poh Koon.

SAP CTO JUERGEN MUELLER AT THE ECONOMIC FORUM 2019

Before the opening of Hannover Messe on Sunday, March 31, Juergen Mueller, Chief Technology Officer and member of the Executive Board of SAP SE, spoke at the Economic Forum of Deutsche Messe AG and the Federation of German Industries (BDI). The topic of the event was about "digital networks and global competition – challenges for a sustainable industrial policy" and was attended by 300 invited politicians, industry representatives and corporate decision makers. After a keynote address by the Minister-President of the German Federal State of Lower Saxony Stephan Weil, and between presentations by Prof. Dieter Kempf, President of the BDI, and Günther Oettinger, European Commissioner for Budget and Human Resources, and a speech by Peter Altmaier, Germany's Federal Minister for Economic Affairs and Energy, the Chief Technology Officer of SAP SE took to the stage with Stephan Weil and representatives from Siemens as well as IBM to discuss current challenges in industrial policy in Germany and Europe.

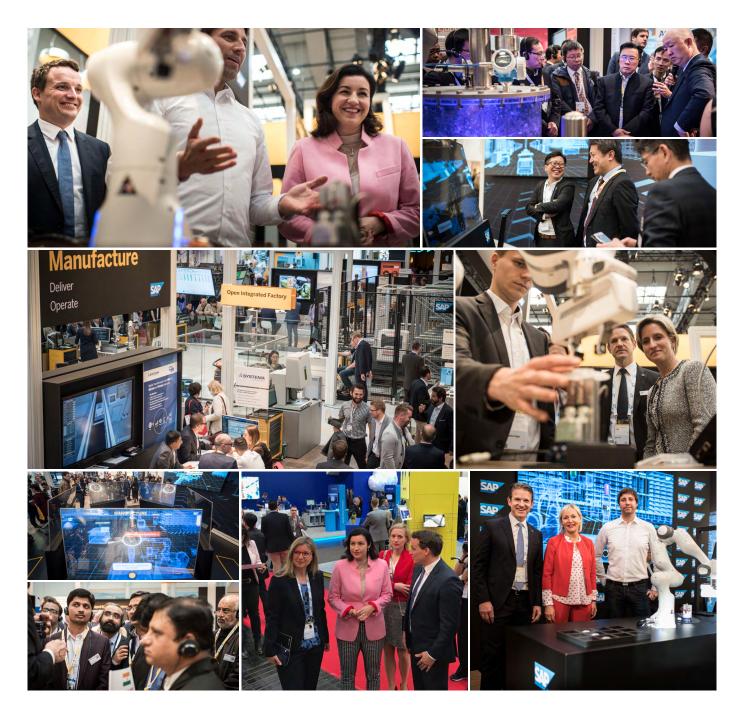




OPEN INDUSTRY 4.0 ALLIANCE – ANNOUNCING AN OPEN ECOSYSTEM FOR THE DIGITAL TRANSFORMATION OF INDUSTRIAL MANUFACTURING PLANTS

The digital transformation is breaking down the conventional barriers between industries. Partnerships and cooperation beyond company boundaries are becoming crucial for success. However, this is a big challenge for many organizations, because the reality of operations in a factory, production plant, or logistics center is characterized by a huge variety of different classes and manufacturers. Proprietary and varying standards in connectivity, data management, IT security, and collaboration create additional work and hinder the rapid and comprehensive scaling of Industry 4.0.

At Hannover Messe, companies from the mechanical engineering, industrial automation, and software industries announced the foundation of the "Open Industry 4.0 Alliance", to overcome proprietary standalone solutions and give the digital transformation in European industry a decisive push forward. The founding members are Beckhoff, Endress+Hauser, Hilscher, IFM, KUKA, Multivac, and SAP, although the Allianz is open to all companies. Based on existing standards such as IO-Link, OPC UA, and RAMI, the members of the Allianz plan to create what is known as an Open Industry 4.0 Framework for a product's entire journey, from the object on the factory floor to service. The goal is to have the machines in a smart factory speaking the same "language."





Digital Logistics Disrupted

Interview with Hala Zeine, President Digital Supply Chain



Hala Zeine, President Digital Supply Chain

This is the second time you have taken part in the Hannover Messe as the President of Digital Supply Chain at SAP. How was this year different than 2018?

In past years, the topic of Industry 4.0 – and how the economy can move towards achieving it – was very much the focus. This year, we're one step further: The discussion is more about how this Industry 4.0 can actually be realized.

Another thing we did at the

Hannover Messe was to announce the foundation of the "Open Industry 4.0 Alliance". This is an alliance of 12 companies who are striving to ensure connectivity for our customers. Our pledge is to assume responsibility for harmonizing our technologies rather than burdening our customers with this task. That's good news for companies with IoT strategies, because the alliance will facilitate quite a few things.

How is SAP helping companies to implement their strategies for Industry 4.0?

Several trends are having an impact on logistics. First: customer focus. This can be seen in the personalization and individualization of modes of production. Second: innovative business models, known as "x-as-a-service" offerings. The trend is definitely toward pay-as-you-go models, which are also prevalent in B2B and B2C settings. Third: direct customer sales. Retail is experiencing a significant increase in direct customer models with smaller batch sizes and shorter product lifecycles, as well as delivery to many distribution points "on the last mile".

The technologies supporting these trends include 3D printing; the Internet of Things for more transparency, timely alerts, and smooth handling; and artificial intelligence for contactless and adaptive processes. Together, these technologies support the smart company. Data is used to achieve results with fewer risks, and the supply chain gains new, customer-centric functions.

Another development relates to complete transparency in logistics. To achieve this, business processes are connected with real-time data from assets, devices, customers, suppliers, and

logistics providers. SAP offers a fully integrated approach for modern logistics – from design through operations – to cater to these trends and enterprise requirements.

How does the supply chain fit into an intelligent enterprise?

Our Digital Supply Chain slogan is 'Connect Digitally to Perfect Reality.' We connect the entire supply chain, starting with the design of new smart products and assets. Planning and forecasting demand enables the supply chain to respond and organize for orchestration with manufacturing and delivery with logistics processes, including after sales maintenance and service for assets and the feedback loop. Then, the product is shipped, which involves logistics processes and includes customer service, asset management, and feedback. And let's not forget the complete, end-to-end planning processes along the entire supply chain. We call this "Design to Operate".



Hala Zeine explains the setup of the SAP booth to Gerhard Oswald, member of the SAP Supervisory Board, and Christian Klein, member of the SAP Executive Board

What's more, we map the real world with a digital twin. There's great potential in this technology. For example, it enables physical assets – such as a bridge or a pump – to be replicated digitally. With the digital twin, we can monitor changes to the original in real time. Using simulations, we can remove potential vulnerabilities or try out new approaches, without interfering with the physical asset.

What do you personally find especially exciting about your business unit?

The technologies we talked about here have already contributed enormously to more transparency and security, so that ethically sound, sustainable, and climate-friendly supply chains are possible today – and, ultimately, the customer is satisfied. These are exciting times for logistics.



The Human Factor in Digitalization

An innovation culture that places people at its heart as a decisive factor for success in the digital transformation



Anja Schneider, Senior Vice President and Global Head of Customer Innovation in the Board Area of Technology and Innovation at SAP SE

The digital transformation is fundamentally changing society and all sectors of industry, and it is accompanied by fast-paced technological advances. As a consequence, both the business and economic demands that companies face are increasing and the call for innovations and new business models is getting ever louder. Various factors are responsible for these trends, including the Internet of Things, the immense flood of different data, and the necessity to provide "end-to-end solutions" in the cloud.

time, take every single employee on the digitalization journey and offer them novel prospects. The human factor is crucial for getting a technology accepted and actively putting it to use.

Yet, every actor in the industry must figure out their own route to becoming an intelligent enterprise based on quite different circumstances and requirements. The customer-centric, structured innovation approach from SAP uses design thinking methodologies to support companies individually, so that they can overcome innovation obstacles and establish problem-solving approaches that follow an overall strategy for an intelligent enterprise as well as an immediately implementable and comprehensive IT and enterprise strategy. Here, the focus is clearly on people, notably the users in the organization: Application scenarios are developed across units – from IT to the management board and the user departments – that serve both the company and the workforce and help achieve innovation and integrate it actively into employees' day-to-day work. People and technology are thus merged, so that genuine innovation can happen.

Digitalization "with the handbrake on"

That is why companies throughout the world are having great difficulties in successfully implementing a consistent strategy for the digital transformation. Current findings from market observers such as Boston Consulting Group show how the performance gap is widening between the digital champions and the laggards. According to the results of the study "Digital Maturity Is Paying Off", which was published last year, the United States outperformed Europe with more digital champions (25% versus 22%) and fewer organizations that appeared significantly behind in their digital capabilities (31% versus 33%). Similarly, in the current investment report for 2019 of the German-Speaking SAP User Group (DSAG), survey participants stated they were more skeptical about digitalization efforts in their companies than one year ago.

Creating an innovation culture that places people at its heart

To keep peace with the developments, companies must tread new paths and establish an innovation culture and innovative initiatives that are agile and work across units but, at the same

Islands of innovation hinder a consistent digital transformation

Innovation is far less of a technical challenge than a few years ago. New technologies such as machine learning and the Internet of Things are not only available and already integrated with many business applications, but – above all – can be deployed relatively fast through cloud infrastructures. However, it is often the case that these technologies are only used in isolated projects and are implemented on proprietary and poorly integrated infrastructures.

The big challenge is to deploy these innovation technologies in an agile way across units, to create sustainable new business models as well as to optimize processes. This is a task for the entire organization and puts great pressure on every single employee to handle technology in his or her team confidently and effectively – because genuine added value can only be created if technologies connect and process data across all areas of the company.

Author: Anja Schneider | Senior Vice President and Global Head of Customer Innovation in the Board Area of Technology and Innovation at SAP SE



Overcome existing innovation obstacles and establish problem-solving approaches: Profit from holistic, agile, people-centric innovation that includes everything from the formation of new business ideas to the development and support of custom-made, high-quality applications.



SAP news

Innovative Exchange Platform for the Public Sector

SAP Info Day for Public Services in Stuttgart

The SAP Info Day for Public Services has established itself as an important platform for customers from the public sector to exchange information and to network. Topics range from important trends in using new technologies to practical experience in realizing smart administration. This year, the SAP Info Day took place on May 15 and 16 at the Carl Benz Center in Stuttgart, Germany. Together with our co-host, the federal state of Baden-Württemberg, and our premium sponsor OpenText, we set up a completely new event format allowing room for open discussions, networking, and valuable practical insights. Furthermore, the event was an ideal opportunity for Nikolaus Hagl to introduce himself as the new Head of Public Services & Healthcare and member of the Management Board of SAP Deutschland. He took over this role from Susanne Diehm on May 1, 2019.

Innovative topics such as smart cities/smart countries, the future of work, and analytics were on the agenda during day one. Stefan Krebs, Chief Information Officer of the German Federal State of Baden-Württemberg, presented digital@bw as the first digitalization strategy in Germany to be applied throughout a federal state and across departments. Matthias Lichtenthaler, Head of Digital Government & Innovation at the Austrian Federal Computing Centre (BRZ), who is responsible for the digitalization of the public sector in Austria, gave the event a more international touch. The BRZ operates one of the biggest SAP infrastructures in Europe, with hundreds of thousands of users. In this context, Lichtenthaler gave an overview of the areas of innovation, including smart process automation.

The second day was devoted to artificial intelligence and kicked off with a keynote speech by Lena-Sophie Müller, chairperson of Initiative D21, followed by an experts' talk. Next

came short presentations by customers and partners that examined various topics in greater detail and gave insights into digital lighthouse projects. For example, the city of Heidelberg presented the benefits of open platforms for "smart cities". In addition, the German Federal Ministry of Defense showed what role the digital twin plays in the digitization of lifecycle data in the German Armed Forces. The three practical SAP workshops, where customers discussed current topics and devised "hands-on" solutions to diverse problems, were also highly popular.

With around 300 participants, the event and its new format proved to be a big hit. The open conceptualization, which enabled the exchange and development of innovative ideas, was particularly well received.



Susanne Diehm, Chief Operating Officer and Head of Cloud, member of the Management Board of SAP Deutschland; Nikolaus Hagl, Head of Public Services and Healthcare, member of the Management Board of SAP Deutschland



SAP Executive Board Member Michael Kleinemeier Meets Uzbek President Mirziyoyev

SAP wants to help Uzbekistan digitalize its administration

As part of an official visit to Germany by an Uzbek delegation, a meeting between SAP Executive Board Member Michael Kleinemeier and President of Uzbekistan Shavkat Mirziyoyev

took place on January 22 in Munich. Germany has been an important trade and business partner for Uzbekistan for many years. At the meeting with representatives of German industry, the possibilities for future cooperative projects were discussed. SAP has been active in the Central Asian country since 2011 and has completed many successful projects in various areas of industry over the past years. In a personal meeting with President Mirziyoyev, Kleinemeier stressed that Uzbekistan's importance as a strategic partner for SAP and expressed an interest in working with the Uzbek government to develop a strategic digitalization schedule for the country. Kleinemeier highlighted SAP's considerable experience in this area and offered partnerships in fields such as the digitalization of civil services, the modernization of public administration and the national health platform, the end-to-end optimization of the national financial cycle, the deployment of Industry 4.0 technologies, and the development of the domestic market for small and midsize enterprises.



January 2019: Representatives of German industry and Uzbek President Shavkat Mirziyoyev discuss opportunities for future collaborations

New Smart Government Trends for Central and Eastern Europe

International influencers from politics and business discuss the region's opportunities at the SAP Data Space in Berlin

Together with the German Eastern Business Association (OAO-EV), SAP hosted the second Digital Lunch Break, this time entitled "Diplomacy Meets Digitalization", on March 13 at SAP Data Space in Berlin. Under the patronage of Serbian Ambassador H.E. Dr. Dušan Crnogorčević, ambassadors, members of the German parliament, and guests from the diplomatic missions and the IT community met to make use of the opportunity to discuss the subject of smart government immediately before the Western Balkans Summit. In light of political efforts to achieve a harmonized digital domestic market in Middle and Eastern

Europe (MEE), this is a highly topical issue. Three speakers shared interesting insights and viewpoints in their speeches: SAP MEE Public Services General Manager Natalia Panina presented the latest digital trends for digital government solutions, H.E. Dr. Crnogorčević spoke about digitalized government as a key factor in good government leadership and growth, and Helge Tolksdorf, Director of the Department for EU Enlargement for Southeast Europe and Turkey at the German Ministry for Economic Affairs and Energy, presented the perspective of the German government. We are looking forward to further meetings at SAP Data Spacel





Digital Lunch Break 2019: Ambassadors, members of the German parliament, and guests from the diplomatic missions and the IT community talk to each other about intelligent government





Climate change, population growth, and poverty are some of the huge challenges facing Africa. At the same time, this continent has enormous potential. Is digital transformation the key to capturing it? Can digitalization open up new avenues for strengthening the economies of African countries and integrating them fairly into global value chains?

Dr. Gerd Müller, Member of the German Parliament and German Federal Minister for Economic Cooperation and Development, will open the evening with a keynote speech.

Following this, **Michael Kleinemeier**, member of the Executive Board of SAP SE, will describe SAP's activities in Africa. **Ursula Owusu-Ekuful**, Minister of Communications of the Republic of Ghana, will share her experiences with digitalization and the opportunities it presents for her country. The economist **James Shikwati** will give an insight into how innovation can boost the economic development of Africa.

After the talks, the speakers will be available to answer your questions in a podium discussion moderated by **Geraldine de Bastion**.

During the subsequent "Flying dinner," we will have the opportunity to discuss the presented solution approaches and can look forward to a lively exchange of ideas and opinions. Be there on June 26!

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Eleven-Point Plan for the Digitalization of Germany

1. Digitalize Germany's education system

The German federal government and state governments, educational institutions, and companies must join forces to anticipate future employment opportunities, foster Al capabilities, and ensure that employees are adequately qualified. SAP believes that a fundamental knowledge of technology, systemic and interdisciplinary thinking, and "learning how to learn" are fundamental competencies that should be taught to all students and trainees, regardless of the type of school, university, or vocational college. To enable companies to continuously invest in the digital competencies of their employees, the planned "Nationals Skills Strategy" should provide incentives for organizations to be proactive in offering internal qualification opportunities. These could be, for example, tax incentives for further training measures.

2. Foster artificial intelligence as a growth driver

SAP welcomes the integrated and human-centric approach of the German government's AI strategy. In order to meet SAP's own ambitious objective of establishing Germany as a leading location for AI, the strategy must include specific implementation steps and effectiveness indicators, and its strategic roadmap must be defined more clearly. SAP believes that special attention should be paid to applicability when expanding existing competence centers for AI. Professorships for AI must be made more attractive to high-caliber researchers by adjusting the collective wage agreement for public sector employees. Facilitating public project funding and providing tax incentives for research and development – including for large companies – would accelerate applied research in the industry.

3. Improve conditions for startups

SAP advises bundling the available public funds to support startups, because the individual portfolios of direct state-led support measures for startups are too small to allow high-risk financing. At the same time, the German government should provide incentives to make it easier for private investors to invest in venture capital funds and young enterprises. In addition to establishing liquid exit channels for venture capital investments, the creation of spinoff enterprises from scientific institutions should be given more support. In the first few years after the creation of an enterprise, legislation should be introduced to keep bureaucracy and tax burdens for startups at a minimum.

4. Expand the gigabit infrastructure and digital testbeds

The slow expansion of gigabit infrastructures is putting Germany at a disadvantage and impedes the introduction of modern technologies such as cloud computing and Industry 4.0. Conditions must therefore be created to enable the fast-

est-possible expansion of comprehensive and adequate gigabit infrastructures before 2025. With the establishment of the Labs Networks Industrie 4.0 by the Plattform Industrie 4.0, many testbeds related to the fourth industrial revolution have been created in Germany since 2016. These positive experiences show that there should be more support for testbeds, such as blockchain-based goods transport and artificial intelligence.

5. Make the EU General Data Protection Regulation (GDPR) innovation-friendly and promote digital business models

The introduction of the GDPR does not need to mean that the development of data protection legislation is now set in stone. Instead, lawmakers must keep up with technical and economic developments. SAP welcomes the fact that the German government is looking into this as a part of its AI strategy.

6. Harness technological potential to benefit data policies in the health sector

The digitalization of healthcare offers great opportunities to improve medical provision in Germany. However, the protection of patient data is handled differently from federal state to federal state in Germany, despite EU-wide harmonization. If our aim is to have data-driven medical research and treatment, clear rules are necessary about the degree of anonymity that is necessary for a data record to be usable, for instance, for research purposes without requiring the patient's consent. It should be examined whether it is better for patients to give (prior) consent to the processing of their data or whether subsequent time-limited dissent (opt-out) requirements would make more sense.

7. Avoid the overregulation of digital platforms

Strong consumer protection is imperative for trading platforms for consumers. However, distinctions must be made between B2B and B2C platforms. The principle of consumer protection does not work on B2B platforms, because companies enter into contracts with each other as equals. The principle of freedom of contract should continue to apply among merchants. SAP believes that the existing regulations provide sufficient legal certainty.

8. Digitalize public administration

A modern, efficient, and citizen-centred administration is important to enable Germany to compete at the international stage. However, simple and fast communication is hardly possible due to requirements to use the written form and sign documents. Municipalities should therefore be given greater freedom to dispense with signatures and the duty to formally apply federal legislation ("experiment clause"). To give citizens the modern services they expect, cloud services are always



the first choice. Furthermore, possible application areas for analysis tools in the public sector must be examined. Big data integration and analyses could create the necessary basis by putting previously unrelated and unstructured government data into a meaningful context.

9. Make enterprise tax law more competitive

German tax law still contains many regulations that (implicitly) hamper innovation and investment. To be able to match the pace of innovative industries abroad, the following adjustments, in particular, are recommended:

- Reduction of the nominal tax rate for corporations and partnerships to a maximum of 25%
- Moderate revision of the German Foreign Transactions Tax Act (AStG)
- Removal of existing restrictions in the area of loss utilization
- Prompt introduction and implementation of the planned tax relief for research and development (R&D)

The draft of the law to provide tax relief for research and development (German Research Allowance Act, FZulG) dated April 12, 2019 is a welcome development. However, limiting

the allowance to a maximum of €500,000 (in real terms) per year and company or enterprise group sends only a weak signal to industry. The allowance amount should be increased significantly. Furthermore, aid should be provided to ordering parties for contracted research.

10. Foster the free flow of data

To safeguard the long-term competitiveness of European ICT companies, the EU must define standards in its trade agreements with third countries. A priority here is the removal of unreasonable obligations to localize data.

11. Harmonize export control standards internationally

Current draft revisions of EU dual use controls include cybersecurity tools and data analysis programs. A unilateral regulation by the EU would not change the prevalence of these technologies but would put the European IT industry at a disadvantage compared with international competitors. The goals of export controls, as well as the structure of European and German export control standards, should therefore be defined in accordance with international regulation regimes and in close collaboration with international partners.

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