SIEMENS

Background information

Hanover, April 24, 2017

Hannover Messe 2017, Hall 9, Booth D35

More productive, customized production through digitalization

- Food & Beverage: Customized products ready for mass production
- Pharma: Faster, personalized pharmaceutical production through digitalization
- Energy for industry: Smart energy management through data analysis
- Additive manufacturing: Digitalization for greater productivity and customization



The digitalization of the manufacturing and process industry is continuing to advance. Consumers are demanding increasingly customized products, innovation cycles are becoming shorter, and competitive pressure is growing. Digitalization offers numerous opportunities for companies to respond to the changed market conditions. These include reduced times to market, increased flexibility and efficiency, and the assurance or even the improvement of product quality. To facilitate this, Siemens offers a portfolio of hardware and software as well as specific services, all of which are already available, enabling companies of all sizes to benefit from digitalization: the Digital Enterprise.

The central focus of this year's Siemens booth in Hanover, the Digital Enterprise will be made tangible to visitors in the truest sense of the word at one of the multimedia tables. Also featured will be a wide selection of exhibits designed to demonstrate the common foundations for the Digital Enterprise applicable across all sectors of

industry, and more specifically how this digital vision will shape the discrete manufacturing and process industries.

The seamless integration of automation hardware and software not only allows companies to collect and process the data from machines and plants. They can also use that data to gain a true competitive edge and map the actual production world as a digital twin.

Entry into the digital sphere is possible in any type of industry or for any kind of machine, and can be gradually upgraded and expanded as required.

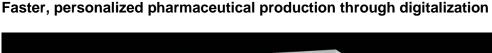
A detailed background information on this topic is available at www.siemens.com/press/pool/de/events/2017/digitalfactory/2017-04-hannovermesse/background-digitalization-e.pdf





We have all become familiar with dairy products such as yoghurt or milk drinks and shakes in different flavors with innovative packaging methods – devised and designed by the manufacturer. Today's dairy industry is shaped by the demands of mass production and high cost-sensitivity. However, the endless possibilities of digitalization may enable the consumers themselves to design products and packaging according to their own tastes. Siemens will be offering a glimpse into this future using the example of milk processing at the highlight showcase for the food and beverage industry and demonstrating the practical application of digital tools in seamless interaction with our automation hardware: from the product idea to actual production, from bottling to packaging and labeling – using data and end-to-end automation.

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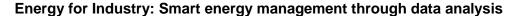




An increasing global population and rising requirements from patients and health authorities are making it more and more difficult for pharmaceutical companies to achieve continuous growth. In addition, personalized medicine for patients are playing an increasingly important role, as they are tolerated better due to differences in patients' metabolisms and cause fewer side-effects. Pharmaceutical companies can target this market in order to remain ahead of the competition, but this means reducing time-to-market while complying with complex quality and patient safety regulations.

Siemens has developed a solution portfolio tailored to the specific needs of the pharmaceutical industry. Based on a plant model for chemical pharmaceutical production, the company shows how Integrated Engineering to Integrated Operations increases process efficiency and flexibility along the value chain. By analyzing hardware and software products, Siemens is helping the pharmaceutical industry increase its process knowledge.

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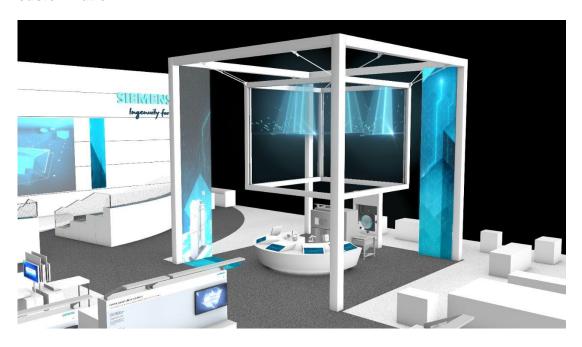




Electrical energy is the indispensable foundation for successfully transitioning to Industrie 4.0. To optimize their production, companies need a reliable and efficient power supply of best quality at the lowest possible cost. In many cases, producing electricity in-house is the most attractive option for compensating demand peaks and fluctuating energy prices. Digitalization is what makes it possible to tap the full potential of energy management, in-house generation, and the new potential of the energy market. The plant model on Siemens' Energy for Industry table is interactive and provides in-depth information on touch displays to explain how industry can benefit.

A detailed background information on this topic is available at www.siemens.com/press/pool/de/events/2017/digitalfactory/2017-04-hannovermesse/background-energy-for-industry-e.pdf

Additive Manufacturing: Digitalization for greater productivity and customization



Reducing time-to-market for products, accommodating increasingly individual customer requirements, and offering favorable prices while maintaining the same or even a higher level of quality: these are the challenges the manufacturing industry is facing. Additive Manufacturing has a key role to play when it comes to meeting these with the further advance of digitalization. This production method allows industry to save time while flexibly and efficiently producing workpieces and products that would be impossible using conventional production processes. At a multimedia table, Siemens will be using illustrative examples to demonstrate all the process steps involved, from digital product design and engineering through to preparation for printing.

A detailed background information on this topic is available at www.siemens.com/press/pool/de/events/2017/digitalfactory/2017-04-hannovermesse/background-additive-manufacturing-e.pdf

This background information and further material are available at www.siemens.com/press/pool/de/events/2017/digitalfactory/2017-04-hannovermesse/background-highlights-e.pdf

For further information on Siemens at the Hannover Messe 2017, please see www.siemens.com/press/hm17 and www.siemens.com/press/hm17 and www.siemens.com/press/hm17 and www.siemens.com/hannovermesse

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Siemens AG (Berlin and Munich) is a global technology powerhouse that has stood for engineering excellence, innovation, quality, reliability and internationality for more than 165 years. The company is active in more than 200 countries, focusing on the areas of electrification, automation and digitalization. One of the world's largest producers of energy-efficient, resource-saving technologies, Siemens is a leading supplier of efficient power generation and power transmission solutions and a pioneer in infrastructure solutions as well as automation, drive and software solutions for industry. The company is also a leading provider of medical imaging equipment – such as computed tomography and magnetic resonance imaging systems – and a leader in laboratory diagnostics as well as clinical IT. In fiscal 2016, which ended on September 30, 2016, Siemens generated revenue of €79.6 billion and net income of €5.6 billion. At the end of September 2016, the company had around 351,000 employees worldwide. Further information is available on the Internet at www.siemens.com.