

Singapore, January 24, 2019

Leading Industry 4.0 players collaborate to help manufacturers accelerate digital transformation

- **New initiative targeted to launch at Hannover Messe 2019**

Singapore Economic Development Board (EDB), McKinsey & Company, SAP, Siemens and TÜV SÜD today announced a collaboration to support companies, both big and small, scale the adoption of Industry 4.0 technologies.

The collaboration aims to develop tools and offerings that can accelerate the digital transformation of manufacturers in Singapore and internationally. This is achieved by leveraging the collective expertise of:

- **EDB**, the lead economic agency of Singapore, will focus on industry development and ecosystem building to transform its industries and create good job opportunities for Singaporeans.
- **McKinsey & Company**, a leading global management consulting firm, will serve as a Knowledge Partner with its experience in helping companies undertake process redesign, technology road-mapping and organisational capability development.
- **SAP**, a world leader in business software and digital technologies, helps manufacturing companies become more intelligent with end-to-end process agility and business innovation.
- **Siemens** provides a holistic and industry-specific portfolio for the digital transformation of the discrete and process industries. It comprises automation as well as Industrial Software, Industrial Communication, Industrial Security and Industrial Services including consulting over the entire lifecycle to support manufacturers to implement their individual digital transformation project.

- **TÜV SÜD**, a global testing, inspection, certification and training company ensures Industry 4.0 solutions are safe, secure and reliable.

In 2017, EDB and TÜV SÜD launched the Smart Industry Readiness Index, which is a diagnostic tool to help companies assess their readiness for transformation (see *Annex B*). The Index has been substantially applied in Singapore and is being rolled out in Indonesia, Thailand, India, USA, Europe and Japan.

As a next step, EDB in collaboration with McKinsey & Company, SAP, Siemens, and TÜV SÜD will enhance the Index with a computational tool that helps companies identify and recommend focus areas and digital initiatives to prioritise based on their individual readiness score and current financial performance. This “*Prioritisation Matrix*”, will be launched at Hannover Messe 2019, alongside a white paper detailing its concept and development.

Annex A: Backgrounders and Quotes from collaborating organisations

Chng Kai Fong, Managing Director, EDB

“While interest in Industry 4.0 has caught on, many companies are now experiencing a ‘pilot trap’ where transformation activities may be underway but have yet to scale beyond proofs of concept to yield meaningful bottom-line benefits. The collaboration will enable us to establish a neutral, open and qualified Industry 4.0 ecosystem which will facilitate the transformation of companies’ processes, technologies and organisation globally and at scale.”

About the Singapore Economic Development Board (EDB)

The Singapore Economic Development Board (EDB), a government agency under the Ministry of Trade and Industry, is responsible for strategies that enhance Singapore’s position as a global centre for business, innovation, and talent. We undertake investment promotion and industry development, and work with international businesses, both foreign and local, by providing information, connection to partners and access to government incentives for their investments. Our mission is to create sustainable economic growth, with vibrant business and good job opportunities for Singapore.

For more information on EDB, please visit www.edb.gov.sg

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About McKinsey & Company

McKinsey & Company is a global management consulting firm, deeply committed to helping institutions in the private, public and social sectors achieve lasting success. For over eight decades, our primary objective has been to serve as our clients' most trusted external advisor. With consultants in more than 100 offices in 60 countries, across industries and functions, we bring unparalleled expertise to clients anywhere in the world. We work closely with teams at all levels of an organization to shape winning strategies, mobilize for change, build capabilities and drive successful execution.

Christoph Schmitz, Senior Partner and Global Leader for Manufacturing & Supply Chain, McKinsey & Company

“Our global survey shows most manufacturing companies consider digital manufacturing a priority and see themselves ahead of the game. We are encouraged that a clear majority have also embarked on their Industry 4.0 journey by piloting digital solutions. However, for most companies, advancing beyond the pilot stage to broader rollout within the organization is still a big challenge, and this platform has been designed with this challenge in mind. Through this powerful collaboration, we are excited to provide a holistic Industry 4.0 ecosystem that will help our clients win the Digital Manufacturing race.”

About McKinsey's Digital Capability Centers (DCC)

McKinsey's Digital Capability Centers (DCC) are a global network of Industry 4.0-focused capability centers to drive digital transformation of companies around the world. Offering services from experiential learning and capability-building to piloting new technologies, the DCCs support companies at every stage of their digital transformation journey. The DCC network includes facilities in Aachen (Germany),

Beijing, Chicago, Singapore and Venice (Italy). Each center has been founded in partnership with a leading industry consortium, government organization, or research institution.

Deepak Krishnamurthy, Executive Vice President, Chief Strategy Officer, SAP SE

“This collaboration aims to create an intelligent, networked, data-driven model to help manufacturers realize their Industry 4.0 vision. SAP is proud to be part of this collaboration and is committed to helping our industrial customers identify digital transformation opportunities from the factory floor to the board room. We strongly believe that enhancing the Smart Industry Readiness Index will help businesses enhance productivity by leveraging Industrial IoT and Digital Supply Chain solutions.”

About SAP

As market leader in enterprise application software, SAP (NYSE: SAP) helps companies of all sizes and industries run better. From back office to boardroom, warehouse to storefront, desktop to mobile device – SAP empowers people and organizations to work together more efficiently and use business insight more effectively to stay ahead of the competition. SAP applications and services enable more than 404,000 business and public sector customers to operate profitably, adapt continuously, and grow sustainably. For more information, visit www.sap.com

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Klaus Helmrich, Member of the Management Board of Siemens AG:

“Digitalization and Industry 4.0 initiatives take center stage in many manufacturing firms today. Regardless of company size, the digital transformation reshapes every business aspect and also brings along exciting developments, new opportunities and new business models. To achieve this, collaboration is the catalyst of success. Within the framework of this collaboration Siemens provides a holistic portfolio for

the digital transformation of the discrete and process industries. This includes consulting for manufacturers, supporting them in implementing advanced engineering, manufacturing and IoT solutions.”

About Siemens AG

Siemens AG (Berlin and Munich) is a global technology powerhouse that has stood for engineering excellence, innovation, quality, reliability and internationality for more than 170 years. The company is active around the globe, focusing on the areas of electrification, automation and digitalization. One of the 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. With its publicly listed subsidiary Siemens Healthineers AG, 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 2018, which ended on September 30, 2018, Siemens generated revenue of €83.0 billion and net income of €6.1 billion. At the end of September 2018, the company had around 379,000 employees worldwide. Further information is available on the Internet at www.siemens.com.

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Prof Dr-Ing Axel Stepken, Chairman of the Board of Management, TÜV SÜD AG

“Being part of this Network allows us to collaborate closely with the Index partners, leveraging on the evolving ecosystem to most effectively help companies start, scale and sustain their Industry 4.0 transformation from initiation and solutioning to operation. Having developed the Smart Industry Readiness Index together with EDB, and currently rolling it out globally, this engagement synergises with the implementation and operation phase of our manufacturing clients to scale Industry 4.0 solutions. We believe that this ecosystem has the potential to become best practice with an impact on a global scale.”

About TÜV SÜD AG

TÜV SÜD is a trusted partner of choice for safety, security and sustainability solutions. It specialises in testing, certification, auditing and advisory services. Since 1866, the company has remained committed to its purpose of enabling progress by protecting people, the environment and assets from technology-related risks.

Through more than 24,000 employees across over 1,000 locations, it adds value to customers and partners by enabling market access and managing risks.

TÜV SÜD is on the forefront of the fourth industrial revolution. The Industry 4.0 services comprise consultancy, maturity assessments and roadmapping, training, as well as testing and certification of digital twins and connected industrial systems.

TÜV SÜD's experts ensure that smart solutions are safe, secure and reliable.

By anticipating technological developments and facilitating change, TÜV SÜD inspires trust in a physical and digital world to create a safer and more sustainable future.

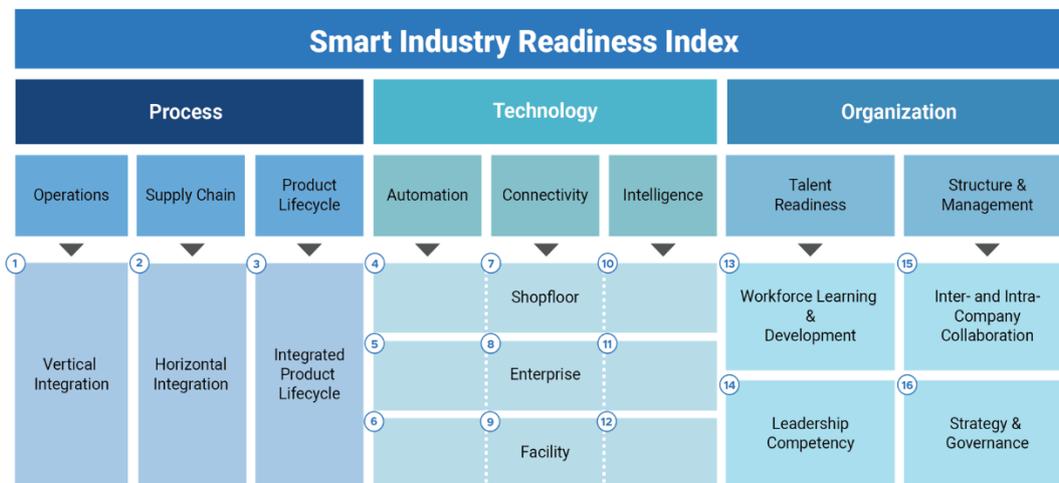
For more information, contact: industrie4.0@tuv-sud.sg

Annex B: The Smart Industry Readiness IndexPhase 1 – Launch of the Index on 13 Nov 2017

The Smart Industry Readiness Index (“the Index”) is a world-first Industry 4.0 tool developed by the Singapore Government to enable the transformation of industrial sectors, at both the enterprise and national levels. Created in partnership with global testing, inspection, certification and training company TÜV SÜD and validated by an advisory panel of industry and academic experts, the Index has been designed as a comprehensive tool to help companies across all industries and sizes to harness the value of Industry 4.0 in a systematic and comprehensive way.

At the enterprise level, the Index lays out a 4-step approach to help manufacturing firms learn about Industry 4.0 concepts, evaluate the current state of their facilities, architect a transformation roadmap, and deliver sustained value for their businesses. At the national level, the Index has the potential to serve as a metric for Industry 4.0 benchmarking within and across industries, enabling government bodies to better design sector-specific policy interventions to accelerate the transformation of industrial sectors.

The Index comprises 3 layers. At the top are the 3 fundamental building blocks of Industry 4.0: Process, Technology, and Organization. Underpinning these building blocks are 8 pillars of focus, which then map onto 16 dimensions of assessment. For each of the 16 dimensions, the Index provides an assessment matrix which companies can use to evaluate their current processes, systems and structures. The assessment matrix also doubles as a step-by-step improvement guide, as each dimension provides intermediate steps needed for companies to progress.



Phase 2 – Provision of Public Workshops and 300 Funded Assessments on 22 March 2018

Since the launch of the Index in 2017, we have seen strong momentum and interest from both the local and international communities. To-date, more than 2,000 business executives from over 500 companies have attended the public workshops and conferences hosted by the Government on the Index.

To support our industrial sectors to leverage on the Index to initiate or accelerate their transformation, Dr Koh Poh Koon, Senior Minister of State for Trade and Industry and National Development, announced the provision of 300 funded assessments of the Index to help SMEs and MNCs across all industries kick start their Industry 4.0 transformation. To further amplify the reach and use of the Index, an accreditation programme will also be developed to train and qualify assessors.

This press release is available at www.siemens.com/press/PR2019010126DFEN