

AI & IoT for Smart Cities

IoT-Week, Bilbao, 04.06.2018 Siemens Corporate Technology, Michael May

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Siemens Corporate Technology

Many major breakthroughs in Al occurred since 2011, and will have **SIEMENS** significant impact on business

Definition of AI

Creating machines that perform functions that require intelligence when performed by people (Kurzweil, 1990)

Before 2011



1946: Zuse's *Z*3, first programmable electronic computer

3, **1997**: IBM Deep Blue defeats world's

chess

champion

2005: Honda's humanoid orld's robot *Asimo* comes to life



2011: Watson wins *Jeopardy!* against most successful contestants



2014: Alexa, Amazon's intelligent assistant

debuts



2016: AlphaGo beats Lee Sedol in a Go match

Expected by 20xx+







~2020: All-over
virtual personal
assistants as
interface for
consumers~202x: Fully
autonomously
driving cars
become
market-ready

20xx: Robots may build robot "children" on their own







optimization







2015: Autonomous gas turbine

2016: Predictive personalized heart model



1995: Online learning 2009: Commodity neural nets deployed price forecasting in >30 steel plants using RNN



Vision for AI Driven Business





Knowledge Graph

Digital Companion





Flexible Manufacturing Smart City Monitoring

Data Analytics & Al@Siemens

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MindSphere –

The cloud-based, open Industrial Internet-of-Things (IIoT) ecosystem Ingenuity for life



MindApps

- Developed by Siemens, OEMs, end customers and App developers
- Asset transparency and analytical insights, for example, predictive maintenance

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- Subscription-based pricing model
- Fleet management

MindSphere

- Open interface for developing customer specific apps (MindApps)
- Various cloud infrastructures: public, private, or on-site

MindConnect

- Open standards (for example, OPC UA) for connectivity (also to third-party products)
- Secure plug and play connection of Siemens products

Smart City & Urban Data Analytics – Vienna, Seestadt Aspern Facts and Figures



- Total size: 2.4 million m²
- Net. floor space: 2.2 million m²
- Workplaces: 25.000
- Inhabitants: 25.000

- Apartments, offices, business areas, research quarters and a school campus
- More than 20.000 m² for shops, restaurants and small and medium sized companies



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Aspern Smart City Research (ASCR) Research Fields





Page 6 June 4, 2018

ASCR Smart ICT

A Smart City System Blueprint





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Page 7 June 4, 2018

Smart ICT Overview Analytics, Simulation and Data Discovery





AI & Data Analytics will be disrupting smart cities across the entire customer value chains





Data analytics



Artificial Intelligence



Simulation tools



Cloud & platform technology



Secure connectivity



Cyber-Security

Enabling the next level of ...



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Siemens Corporate Technology – Technology Field Business Analytics & Monitoring 9 Locations world-wide to drive innovation in Advanced Analytics & Al



Thank you!

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