

Unlock the potential – Digitalize your building and plant infrastructure

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Individual needs of building users ...

Comfort

High expectations of user-friendly offices, city districts

Quality of life

New offerings for municipal housing and city districts

Fit for purpose Best conditions for hospital patients, airport travelers etc.

Unlock the potential

Digitalize your building ... meet new market drivers

IoT technology Sensors, Data Analytics, AI



Adaptive infrastructures Forward-looking and flexible buildings

Convergence of infrastructures New business models



Decarbonization Electricity as the #1 energy source



Diverse Roles – Different Requirements

Owners

- Higher capacity through flexibility
- Greater value generation
- **TCO** optimization
- More transparency through KPIs and dashboards

Project developers

- Greater transparency and forward-looking development: 4D-planning and simulation/BIM
- User-orientation: "Human-Centric Design"
- Integration of innovative solutions
- **Risk-minimized project realization**

Architects/planners

- Greater transparency for faster project completion and earlier conflict and error detection
- User-orientation: Integration of innovative solutions

Operators

- Operational transparency and operation
- Higher availability of equipment and facilities
- Lower maintenance costs

Individual added value for building users

Distributors/installers/ service companies

- **Digital engineering**
- Modular and IoT-ready systems and devices
- Adaptive maintenance and proactive service offerings

Commercial tenants

- Employee productivity
- Workplace safety and security
- Greater comfort

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City

- Reduce emissions and integrate renewables
- Create livable city districts
- Energy efficient public buildings integrated into the energy market

Grid operators/utilities

- Strengthen customer relationships through added value services
- Integrate building infrastructures in supply strategies and energy markets



An Open and Secure Ecosystem





Open Secure cloud

Secure cloud infrastructure and ecosystem

- Open interfaces/APIs
- Open standards
- Plug and play
- Open partner network
- Cyber-Security "Charter of Trust"

Systemic End-to-end solutions

- Scalability
- Definition of new value chains
- New data-driven services: predictive maintenance
- Cross-sector coverage



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Customized IoT Applications and Services



SIEMENS Ingenuity for life



Develop New Data-Driven Services – Enhance Existing Processes



Smart City Seestadt Aspern

lore reliable and secure operation

New business

potential

»Unique European project for intelligent energy consumption in a smart city quarter«

- 3 networked building complexes (housing, school campus, student home), energy provision on the basis of alternative generation, housing und school campus independently operable, building automation with predictive optimization
- Buildings fully integrated with the grid: 12 network stations with 24 transformers,
 >500 Smart Meters, >100 Grid Monitoring Devices, 6 storage batteries (each 100kWh)
- Networking of buildings and grid, central data station captures 1.5 million daily measurements in real-world conditions, continuous data analytics across domains
- Prototype demo-implementation (energy distribution monitoring) realized in MindSphere

More reliable and secure operation

Up to 70% less energy consumption and CO₂

Reduction in outage duration and cost in low-voltage grid

New business potential

Greater building flexibility enables participation in the energy market: potential > €30 million in Vienna



Unlock the

potential

Sello Shopping Center, Finland

»Data-driven services transform Sello into one of the greenest shopping centers in Europe«

- Remote Analytics: connecting 1,500 energy- and heating/cooling/air conditioning data points with a cloud-based building automation system
- Micro-Grid: 0,5 MW own solar electricity, 2 MW energy storage
- Demand response: enabling participation on the energy market
- Dedicated operations manager



Greater resilience for leading hospital in the UK

»Emergency power management for critical infrastructure«

- Reduce risk of power outages with fast load shedding by selectively disconnecting less important sections
- Manage backup generators in case of grid loss and restore all critical power loads < 1min
- Solution based on redundant SICAM controllers utilizing GOOSE messages via IEC61850 for fast tripping



Greater resiliency with energy restoration inside 1 minute Safe lives through minimized power outage time

More reliable and secure operation

Avoid significant outage penalties

Customer ready for distributed energy system



DB Schenker Head Office, Essen

»The Premium Office in action«

- Desigo CC building management platform: including 1,500 fire alarms, 40 Siport readers, video surveillance systems, Dali lighting control
- Individual quality and comfort with Premium Office:
 560 Desigo automation single-room controllers
- Maximized transparency: fire alarm technology, building security, heating, cooling, air conditioning, lighting and dimming at a touch



MindSphere in Action – Electrical Wholesaler REXEL near Linz, Austria

»New, data-driven business models«

- ISO 50001-compliant energy management at the Regro central depot (Austria)
- Energy monitoring system from the SENTRON portfolio connected to MindSphere
- Amortization of investment possible within two years

lore reliable and secure operation

New business potential

 Rexel offers its own customers energy consulting and implementation: development of a customized MindSphere application together with Siemens

More reliable and secure operation

15% savings through higher energy efficiency

Reduction of 60 tonnes CO₂ emissions

New business potential

Development of new IoT services for customers



Unlock the

potential

Project Gestamp – Power Management in Action – EnergyIP EEA application powered by MindSphere

»Saving energy with big data«

- Maximum transparency thanks to access to requested reports and dashboards via customized web portal
- All plants can be connected globally applicable
- Continuous optimization of processes increases energy efficiency
- No invest due to managed service contract



More reliable and secure operation

€5 m saved in energy bills (2 years cumulative)

15% energy reduction

14 locations online



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Cybersecurity – a critical factor for the success of the digital economy



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DAIMLER	IBM	Munich Security MSC Conterence Munchme Sichernietskonterenz	NXP	SGS	Ŧ··

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Key principles

- **1.** Ownership of cyber and IT security
- 2. Responsibility throughout the digital supply chain
- **3.** Security by default
- 4. User-centricity
- 5. Innovation and co-creation
- 6. Education
- 7. Certification for critical infrastructure and solutions
- 8. Transparency and response
- 9. Regulatory framework
- **10.** Joint initiatives

charter-of-trust.com

Digitalize your building and plant – Unlock the potential

