GKN Powder Metallurgy

GKN Powder Metallurgy comprises GKN Sinter Metals and Hoeganaes. GKN Sinter Metals is the world’s leading manufacturer of precision automotive components as well as components for industrial and consumer applications. Hoeganaes is one of the world’s largest manufacturers of metal powder, the essential raw material for powder metallurgy.
More than 3,000 Customers
12,500 living articles
3 Billions of parts produced a year
Over 230,000 shipments
32 Manufacturing plants over 9 countries
2,000 Production Orders / Day

One Global ERP System

1,500 Machines Connected

Global Manufacturing Execution System

6,500 Digitally Connected People

Global Quality System

28,000 IT jobs serviced / Minute

800 digital measurement stations

Global Operational System

6,500 Digitally Connected People

Global Engineering System

8,000,000 Recorded Measurements / Month
Digital Business Model

Growth Drivers
Time to Market

Rapid Process & Product Development
- Generative Design
- Digital Setup
- Process Development 4.0
- Smart FMEA

Additive Driven Product Life Cycle
- Full Metal Solution Provider
- E-Commerce Platforms

Remote Support and Training
- Remote Problem Solving Support
- Intelligent Data Supply

Active Quality Management
- Automated Quality Checks
- Process Data driven Quality Control
- Improved PPM Performance

Remote Monitoring and Control
- 100% Remote Monitoring
- 30% of Issue Solved Remotely
- Activity Driven Shopfloor Organization

Productivity Drivers
Operational Excellence

Concurrent Engineering
- Product Development 4.0
- Smart Product Launch Process

Customer Centric Innovation
- Ideation Online Process
- Know How Capturing
- Kill email

Instant Customer Services
- Resource Driven Quoting Process
- Instant Quoting Process
- Real Time and Predictive Supply Chain Insights

Connected Supply Chain
- Automated Transport Systems
- +30% Efficiency

Predictive Analysis
- 30% Reduction of Technical Machine Breakdowns
- Predictive Process Parameter and Energy Management

Technology Infrastructure and Enablers

Big Data
Predictive
IoT (CPS)
Cyber Security
System Integration
Augmented Reality
Additive Manufacturing
Autonomous Robots
Autonomous Quality
Our Vision

A closed loop value chain guarantees maximum value creation over the entire life cycle of a product.

Open Business Models help to create a dynamic value recovery over time, not only within the organization but including also our business partners.

Artificial Intelligence and Machine Learning models drive our continuous improvement process and capture process and product know how resulting in an improved Time to Market.

Openness, Transparency and Sharing are cornerstones of a self learning organization, capable to facilitate learning from others and to transform itself.
Added Value Business Model

Time to Market

Rapid Process & Product Development
Process Development heavily supported by data analytics and simulation tools

Concurrent Engineering
Improved speed and time to market but also lowering launch efforts at both ends

Additive Driven Product Life Cycle

Instant Customer Services

Customer Centric Innovation
Our Vision

PM’s shop floor of the future is fully connected and highly automated. Active communication is implemented between machines, assets, product and people and all the data is captured.

Machine Learning and Artificial Intelligence Capabilities drive improvements in resource efficiency, enhancing safety and risk management and higher competitiveness.

Decentralized planning is supported by a connected and self-managed supply chain, wearables unite technology and people.

A highly skilled workforce acts on demand and are agile problem solvers.
Shop Floor of the Future
Operational Excellence

Remote Support & Training
Data transfer via augmented reality tools
Remote problem solving support

Active Quality Management
No unpredicted quality issues in series production
Automated in-process measurement of relevant parameters

Predictive Analytics
Statistical models to predict downtimes and maintenance events
Integrated management of production and maintenance planning
Predictive process model

Connected Supply Chain
All main internal material flows fully automated
Autonomous transport systems
Dynamic and self-controlling material flow planning

Remote Monitoring & Control
Machine status and performance accessible remotely
Possibility to optimize machine performance and material flow remotely
A MIND IS LIKE A PARACHUTE. IT DOESN'T WORK IF IT IS NOT OPEN.

-Frank Zappa
Nanobots kill off cancerous tumours as fiction becomes reality

Researchers inject tiny devices into the bloodstream to deliver drugs with

Holograms are changing the way we interact with computers

3D images that can be manipulated with hand gestures blur the digital and real world

Neurons on a chip let drones smell bombs over a kilometer away

By Aaron Krumins on March 22, 2016 at 3:11 pm | 23 Comments

What is bio-inspired vision?

Bio-inspired vision systems aim to simulate the way nature does vision, completely overthrowing traditional machine vision architectures used for the past 50 years. Biological vision systems are driven and controlled by what is happening within the scenes and not the traditional image sensors, by artificially created firing and control signals that have no relation whatsoever to the source of the visual information and its dynamics. Transcending the framework paradigm of biological vision to artificial imaging systems implies that control over the acquisition of visual information is no longer being imposed externally to an array of pixels but the decision making is transferred to the single pixel that handles its own information individually.

Different than a conventional image sensor

Traditional image sensors acquire static frame snapshots of the entire scene at fixed points in time

Bio-inspired vision sensors sense the relevant dynamic scene context and acquire only what is necessary
Best Tech Gifts for Kids: 2017

TECHIE Homeschool Mom
Number of people who drowned by falling into a pool correlates with Films Nicolas Cage appeared in

- 1999: 140 drownings, 6 films
- 2000: 120 drownings, 4 films
- 2001: 110 drownings, 2 films
- 2002: 100 drownings, 2 films
- 2003: 90 drownings, 0 films
- 2004: 80 drownings, 0 films
- 2005: 80 drownings, 2 films
- 2006: 70 drownings, 2 films
- 2007: 60 drownings, 4 films
- 2008: 50 drownings, 4 films
- 2009: 40 drownings, 6 films

Nicholas Cage
Swimming pool drownings
75% of all digital projects fail

The introduction of technology only rarely leads to the desired success!
Digital Culture

Agile and Speed

Focused on Data

Risk Appetite

Failing Culture

Openness, Transparency and Creativity
**Today**

Organigrams describing the **formal structures** (hierarchy)

Organizational Segmentation by Roles, department etc.

Key performance indicators and goals based on *what employees* "say" and not what they really do, e.g. employee reviews

Target definition and measurement based on a **reactive** approach

**Standardized** training and education, One-size-fits-all communication

**Digital Tomorrow**

**Networks** describing informal interfaces and dependencies (Wirearchy)

**Data and Business** Process Driven Segmentation

Key performance indicators and targets based on *collections of data generated by the employee's activities*

Target definition and measurement based on an **active** approach in real time

**Personalized** communication, individual training and education
Look outside, not inside. Digital change requires the development of eco-systems and cooperation with partners and customers to develop new solutions that create added value.

More Delegation than Control. A digital culture promotes decisions at all levels and flat hierarchies that are necessary to truly harness the value of real-time data.

Failing Culture. Encourage your employees to take risks, fail quickly and learn.

Speed, action and less planning. Digital transformation requires rapid and iterative development of solutions. Classical project and development planning do not lead to the desired results.

Transparency, openness and sharing. A digital culture thrives on transparency and interaction. In the future, the value of information will be defined by the number of users.
Thanks for your attention