### How prepared are we for the challenges of the future? Haptic R&D Consulting offers innovative solutions at MetalShow TIB 2023

This presentation at MetalShow TIB 2023 focuses on the challenges of the future and how Haptic R&D Consulting can help companies prepare and cope with technological and economic changes to come.

Haptic R&D Consulting offers innovative industrial automation solutions based on haptic technology, which improve efficiency and safety, increase productivity, and provide a more immersive experience for operators.

The presentation will also cover topics such as the integration of new technologies, digitalization and its impact on the industry, as well as the impact of robots and cobots in manufacturing.

These innovative solutions offered by Haptic R&D Consulting have been developed to help companies prepare for the challenges of the future and thrive in a continuously changing environment.

CEO – Daniel CHIRTES



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### How prepared are we for the challenges of the future?

### Haptic R&D Consulting offers innovative solutions at

#### MetalShow TIB 2023

	I. How can haptic technology reduce energy and gas costs in industrial production?
11.	From supply chain disruptions to alternative solutions. How can we tackle the challenges?
	The Next Generation AI Powers Autonomous Supply Chain
	Analyzing and Safeguarding Supply Chains
	Building Blocks to Manage the Supply Chain
<i>III</i> .	Forecasting international economic trends and risk management strategies for businesses
	Research defines three new pathways for organizations to manage digital transformation
	The touchy side of innovation: the risks of sharing your ideas without a non-disclosure agreement
	AI-powered apps reduced business risks during the pandemic
IV	What will the factories of the future look like? Discover the concept of smart factories
۶	Smart Factory Using AI Methods
۶	Future Challenges Facing Industry 4.0
۶	Unmanned Smart Factory
	V. The role of digitalization and Industry 4.0 in increasing productivity in factories
	Industria Industry 4.0 boosts cost-effectiveness in motor vehicle manufacturing
۶	Industry 4.0: safety glasses off, data glasses on!
$\triangleright$	How important is visible light communication for Industry 4.0
VI.	From traditional factory to SMART factory: How can we connect devices to improve the production process?
	VII. Robotic Technology - the Answer to the Labor Crisis in Industry
۶	Artificial intelligence does not mean human expertise is no longer needed
۶	HR technosolutionism could be better
۶	The role of haptic technologies in improving the work experience of workers in various industries
	VIII. The Importance of Auditing in Risk and Innovation Management in Business
	SMART FACTORY EVENTS
۶	SIL BARCELONA 2023
≻	IOT Tech Expo – Europe
۶	Blockchain Expo Europe - https://www.haptic.ro/blockchain-expo-europe/
>	DIGITAL TRANSFORMATION WEEK GLOBAL
≻	AUTOMA 2023 – Oil and Gas Automation and Digitalization Congress
	HAPTIC R&D CONSULTING SRL WWW HAPTIC RO INFO @HAPTIC RO
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## I. How can haptic technology reduce energy and gas costs in industrial production?

In the current context where energy and natural gas costs are increasing, the industry is looking for solutions to reduce consumption and achieve significant savings. This is where haptic technology comes in, which can offer efficient solutions to help companies optimize their production processes and reduce costs.

Haptic technology refers to the technology that allows users to interact with a system through tactile feedback. This technology can be integrated into various devices, such as mobile phones, games, simulators, and medical devices. In the context of industrial production, haptic technology can be used to improve efficiency and reduce costs through the tactile feedback offered to operators.

An example of the use of haptic technology in the production industry would be the use of tactile devices to help operators adjust their machines to optimal production parameters. Through tactile feedback, operators could adjust production parameters to reduce energy and natural gas consumption and, therefore, the associated costs.

Haptic technology can also be used to detect and prevent problems that can lead to energy losses. Through tactile feedback, operators can be alerted to potential issues that could lead to energy losses and can intervene to resolve them before significant energy losses and associated costs occur.

In addition, haptic technology can be used to optimize production processes through tactile control. Operators can receive tactile feedback to help them identify inefficient processes and take action to improve efficiency and reduce costs associated with energy and gas.

In conclusion, haptic technology can be an efficient and innovative solution to reduce energy and gas costs in industrial production. Integrating this technology can help companies optimize their production processes, identify problems, and prevent significant energy losses and associated costs. Haptic R&D Consulting is an expert in haptic technology and can offer customized solutions to companies that want to optimize their production processes and reduce costs.

#### More information:

- IoT energy harvesting technologies <u>https://www.haptic.ro/iot-energy-harvesting-technologies/</u>
- Artificial intelligence saves energy- <u>https://www.haptic.ro/artificial-intelligence-save-energy/</u>
- How energy taxes, carbon pricing, and energy subsidies contribute to achieving the EU's climate objectives?- <u>https://www.haptic.ro/how-energy-taxes-carbon-pricing-and-</u> <u>energy-subsidies-contribute-to-achieving-the-eus-climate-objectives/</u>

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# II. From supply chain disruptions to alternative solutions. How can we tackle the challenges?

In the current global context, supply chain disruptions are a major issue for the manufacturing industry. In particular, the COVID-19 pandemic has caused significant disruptions in global supply chains, highlighting their vulnerabilities. In this situation, the question arises: what are the implications of supply chain disruptions and what alternative solutions exist?

The impact of supply chain disruptions can be significant and can manifest in various forms. <u>These include:</u>

**Increased costs:** With supply chain disruptions, costs can increase significantly. For example, if a company needs to find alternative suppliers for its materials, the costs may be higher than those of previous suppliers.

**Production delays:** Supply chain disruptions can lead to delays in production, as deliveries of materials or products can be delayed or even interrupted.

**Quality issues:** When a company has to change its suppliers, it can affect the quality of its materials and products.

In this situation, alternative solutions become increasingly important. Haptic R&D Consulting, a haptic technology consultancy company, offers an innovative solution for the manufacturing industry. The use of haptic technology can help identify problems before they become major issues, allowing companies to take preventive measures before supply chain disruptions have a significant impact.

The use of haptic technology can also help develop more efficient methods for managing supply chains. For example, haptic technology can be used to monitor the condition of equipment and machines in real time, allowing companies to identify issues and take immediate action to resolve them before they have a major impact on production.

In conclusion, supply chain disruptions can have a significant impact on industrial production. However, the use of haptic technology can help identify problems before they become major issues and develop more efficient methods for managing supply chains.

For more information:

- The Next Generation AI Powers Autonomous Supply Chainhttps://www.haptic.ro/next-generation-ai-powers-autonomous-supply-chain/
- Analyzing and Safeguarding Supply Chains- https://www.haptic.ro/analyzing-andsafeguarding-supply-chains/
- Building Blocks to Manage the Supply Chain <u>https://www.haptic.ro/building-blocks-to-manage-the-supply-chain/</u>

08.05.2023

## III. Forecasting international economic trends and risk management strategies for businesses

The growth of inflation and international economic instability can have a significant impact on our businesses. In a volatile economic climate, prices can fluctuate rapidly and production costs can increase significantly. Additionally, an increase in inflation can lead to a decrease in consumer purchasing power, which can result in a reduction in sales and revenue.

One of the biggest problems associated with the growth of inflation and international economic instability is currency volatility. When currencies become more unstable, it becomes difficult to establish prices and plan production. It can also be difficult to maintain relationships with international business partners, as changes in exchange rates can significantly affect production costs and profits.

Another consequence of the growth of inflation and international economic instability is the increase in financing costs. During periods of economic uncertainty, banks may be less willing to offer loans or lend money at lower rates. This can make business financing more expensive and challenging, which can ultimately affect profitability.

However, there are also opportunities in these times of economic uncertainty. While many competitors may be discouraged from innovating or investing, companies that are able to navigate this climate may be able to identify new market opportunities and develop products or services that meet the needs of new consumer demands.

Haptic R&D Consulting can offer innovative solutions to help companies adapt to these economic conditions. By using haptic technology, companies can improve efficiency and productivity, thereby reducing production costs. Additionally, Haptic R&D Consulting can assist in integrating new technological solutions into production and supply chain processes to improve supply chain efficiency and reduce costs. Ultimately, Haptic R&D Consulting can help companies maintain a strong position in the global market by creating innovative products and developing close relationships with international business partners.

#### More information:

- Research defines three new pathways for organizations to manage digital transformation- <u>https://www.haptic.ro/research-defines-three-new-pathways-for-</u>organisations-to-manage-digital-transformation/
- The touchy side of innovation: the risks of sharing your ideas without a non-disclosure agreement- <u>https://www.haptic.ro/the-touchy-side-of-innovation-the-risks-of-sharing-your-ideas-without-a-non-disclosure-agreement/</u>
- AI-powered apps reduced business risks during the pandemic-<u>https://www.haptic.ro/ai-powered-apps-reduced-business-risks-during-the-pandemic/</u>

08.05.2023

### IV.

What will the factories of the future look like? Discover the concept of smart factories

mart factories are a new generation of factories that utilize advanced technologies such as artificial intelligence (AI), the Internet of Things (IoT), and robotics to improve the efficiency and productivity of production processes. Essentially, smart

factories are interconnected cyber-physical systems that integrate digital technology into all aspects of production, from design and planning to manufacturing and distribution.

One of the key features of smart factories is their ability to collect and analyze data in real-time. This data analysis allows factory managers to make more informed decisions,

optimize processes, and identify problems before they become critical. Additionally, smart factories can improve efficiency by utilizing automation technologies such as robots and cobots, which can take over repetitive and dangerous tasks from human workers.

In addition to efficiency and productivity benefits, smart factories can also bring advantages in terms of sustainability and the environment. The use of energy monitoring and management systems can reduce energy consumption and carbon emissions, while robots and cobots can help minimize waste and increase material recycling.

Overall, smart factories represent the future of the manufacturing industry, and are expected to become increasingly widespread and advanced in the coming years. However, their implementation requires significant investments in infrastructure and technology, as well as the training of specialists who can operate and manage these complex cyber-physical systems.

From the perspective of Haptic R&D Consulting, smart factories represent an opportunity for the industry to improve efficiency, productivity, and safety through the integration of digital technologies, including haptic technology. The team of specialists at Haptic R&D Consulting offers consulting and customized solutions for companies looking to implement innovative solutions in their smart factories, in order to remain competitive in a dynamic and constantly changing market.

#### More information:

- Smart Factory Using AI Methods https://www.haptic.ro/smart-factory-using-aimethods/
- Future Challenges Facing Industry 4.0- https://www.haptic.ro/future-challenges-facingindustry-4-0/
- Unmanned Smart Factory- <u>https://www.haptic.ro/unmanned-smart-factory/</u>

V. The role of digitalization and Industry 4.0 in increasing productivity in factories

igitalization and Industry 4.0 are two concepts that have had a significant impact on productivity in smart factories. They bring with them new technologies, processes, and business models that improve efficiency and reduce costs.

Firstly, digitalization allows factories to collect and use real-time data to monitor and optimize production processes. This can include the use of sensors and the Internet of

Things (IoT) to track the condition of equipment, materials, and products in real-time. This information can then be used to identify problems, make forecasts, and make better-informed decisions in real-time, thereby reducing production downtime and increasing productivity.



08.05.2023

Industry 4.0 brings with it a range of technologies that contribute to the

digitalization of production processes, including robots, artificial intelligence, 3D printers, virtual and augmented reality, and many others. These technologies enable factories to produce faster, more efficiently, and with fewer errors. For example, robots can take over repetitive and dangerous tasks from employees, thereby reducing the risk of accidents and human error.

In addition, Industry 4.0 can help optimize supply chains by providing real-time information about product stocks and demands. This allows factories to better manage their stocks and optimize their production processes to more efficiently respond to market demands.

Overall, digitalization and Industry 4.0 can bring significant benefits in terms of productivity and efficiency in smart factories. However, it is important to consider the initial costs and implementation of these technologies, as well as to find ways to prepare and train the workforce to work with these new technologies.

Haptic R&D Consulting has expertise in implementing digital technologies and Industry 4.0 in industrial processes. Our team of specialists can help companies optimize production flows and improve efficiency by integrating haptic solutions and other innovative technologies. Through our personalized consulting and tailored solutions to the needs of each company, we can help increase productivity and competitiveness in an ever-evolving industrial environment.

#### More information:

- Industria Industry 4.0 boosts cost-effectiveness in motor vehicle manufacturinghttps://www.haptic.ro/industry-4-0-boosting-cost-effectiveness-motor-vehiclemanufacturing/
- Industry 4.0: safety glasses off, data glasses on!- https://www.haptic.ro/industry-4-0-safety-glasses-off-data-glasses-on/
- How important is visible light communication for Industry 4.0-<u>https://www.haptic.ro/how-important-is-visible-light-communication-for-industry-4-0/</u>

# VI. From traditional factory to SMART factory: How can we connect devices to improve the production process?

In recent years, the concept of the smart factory has gained ground in the manufacturing industry. To achieve this goal, it is necessary to interconnect devices to transform the manufacturing process into a SMART one. This can be achieved through the Internet of Things (IoT) technology and Industry 4.0.

Firstly, through IoT sensors, devices can be connected and monitored in real-time. These sensors can detect a wide range of information, from temperature and pressure to humidity and vibrations. This data can be collected and analyzed to obtain a clearer picture of the state of machines and equipment within the factory.

Secondly, by using automation platforms such as Programmable Logic Controllers (PLCs) and Supervisory Control and Data Acquisition (SCADA), devices can be controlled and coordinated in real-time. This allows processes to be quickly adjusted to optimize production and reduce downtime.

Additionally, integrating haptic technology into equipment can improve operator interaction with machines and equipment, allowing for greater precision and efficiency in the manufacturing process.

Another important aspect in interconnecting devices in a SMART manufacturing process is security. As the collected and transmitted information is critical to production, adequate protection against cyber attacks and other security threats must be ensured.

In conclusion, interconnecting devices through IoT and Industry 4.0 can transform the manufacturing process into a SMART one, improving productivity and efficiency. Additionally, integrating haptic technology and ensuring information security are crucial aspects in achieving this goal.

Haptic R&D Consulting is a company with expertise in haptic technologies and smart factories. Its team consists of experts in mechanical, electronic, and software engineering, capable of integrating complex systems and providing customized solutions in accordance with the requirements and needs of each client. Haptic R&D Consulting is also up-to-date with the latest trends and technologies in Industry 4.0, capable of providing consulting and services to help companies improve their productivity and efficiency in the manufacturing process.

#### For more information:

- HoloLayouts for the factories of the future <u>https://www.haptic.ro/hololayouts-for-factories-of-the-future/</u>
- The new EU sustainable smart mobility strategy <u>https://www.haptic.ro/new-eu-sustainable-smart-mobility-strategy/</u>
- The potential impacts of artificial general intelligences: insights from haptic analysis -<u>https://www.haptic.ro/the-potential-impacts-of-artificial-general-intelligences-insights-from-haptic-analysis/</u>

#### VII. Robotic Technology- the Answer to the Labor Crisis in Industry

R obots and cobots (collaborative robots) are increasingly being used as a solution to the problem of labor shortage in various industries, including manufacturing. In recent years, they have been adopted by an increasing number of companies due to their ability to work alongside employees and increase production process efficiency.

Industrial robots are capable of performing repetitive and monotonous tasks, while cobots can be programmed to work collaboratively with humans, being more flexible and adaptable to changes in the production process. They can be used in a variety of industries, from automobile production to food manufacturing.

Moreover, the use of robots and cobots can reduce the risk of workplace accidents, as they can be programmed to perform dangerous tasks and work in hazardous environments for humans. Additionally, companies can reduce production costs by using them, as they are capable of working continuously without requiring breaks or sick leave.

However, there are also disadvantages to using robots and cobots in production. One of the most important is that they require significant initial investment, and their implementation can be costly. Additionally, maintenance and repair costs can be high, which can have a negative impact on a company's profitability.

In conclusion, the use of robots and cobots can be an effective solution to combat the problem of labor shortage and increase production process efficiency. However, the initial and maintenance costs must also be taken into account to ensure that their implementation is financially viable. Haptic R&D Consulting can provide expertise in implementing robotics and automation solutions in production processes to increase the efficiency and productivity of smart factories. 

#### More information:

- Artificial intelligence does not mean human expertise is no longer needed-<u>https://www.haptic.ro/artificial-intelligence-doesnt-mean-human-expertise-is-no-longer-needed/</u>
- HR technosolutionism could be better- <u>https://www.haptic.ro/hr-technosolutionism-could-be-better/</u>
- The role of haptic technologies in improving the work experience of workers in various industries- <u>https://www.haptic.ro/the-role-of-haptic-technologies-in-improving-thework-experience-of-workers-in-various-industries/</u>

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#### 08.05.2023

### VIII. The Importance of Auditing in Risk and Innovation Management in Business

Auditing represents an independent and objective evaluation of a business's activities, with the aim of verifying compliance with applicable regulations and standards and identifying any issues or risks. In risk and innovation management, auditing plays a crucial role in identifying potential vulnerabilities and preventing any problems.

Auditing allows for a systematic and structured approach to a business's processes, so that any issues can be detected and remedied as quickly as possible. At the same time, auditing provides a clear and objective picture of the business's performance, which can be useful for identifying opportunities for innovation and improvement.

Regarding Haptic R&D Consulting, the company offers a wide range of solutions for risk and innovation management in business. The team of experts at Haptic R&D Consulting can perform detailed audits in various areas, such as information security, regulatory compliance, risk management, data protection, and many more.

In addition to auditing and risk assessment, Haptic R&D Consulting also offers personalized solutions for improving business performance, such as developing innovation strategies, implementing new technologies, and optimizing business processes. These services can help companies maximize efficiency and gain a competitive advantage in the market.

In conclusion, auditing is essential in risk and innovation management in business, and Haptic R&D Consulting offers personalized solutions tailored to the specific needs of each company to help improve performance and minimize risks.

CEO – Daniel CHIRTES



HOW PREPARED ARE WE FOR THE CHALLENGES OF THE FUTURE?

#### **SMART FACTORY EVENTS**

SIL BARCELONA 2023 - <u>https://www.haptic.ro/the-largest-logistics-congress-in-latin-america-to-be-held-at-sil-2023/</u>

#### THE LARGEST INTERNATIONAL EVENT OF THE LOGISTICS INDUSTRY

As part of SIL 2023, and joining synergies with SIL KNOWLEDGE, four major international congresses will be held, bringing together the most prominent logistics experts: the 39th ALACAT Congress, the 18th European Conference & European Research Seminar of CSCMP, the 19th MedaLogistics Week and the 26th edition of EUROLOG.

- IOT Tech Expo Europe <u>https://www.haptic.ro/iot-tech-expo-europe/</u>
- Blockchain Expo Europe- <u>https://www.haptic.ro/blockchain-expo-europe/</u>
- DIGITAL TRANSFORMATION WEEK GLOBAL- <u>https://www.haptic.ro/digital-</u> <u>transformation-week-global/</u>
- AUTOMA 2023 Oil and Gas Automation and Digitalization Congress-<u>https://www.haptic.ro/automa-2023-oil-and-gas-automation-and-digitalizationcongress/</u>



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