Skills for the Future

Erasmus+

EUROPEAN
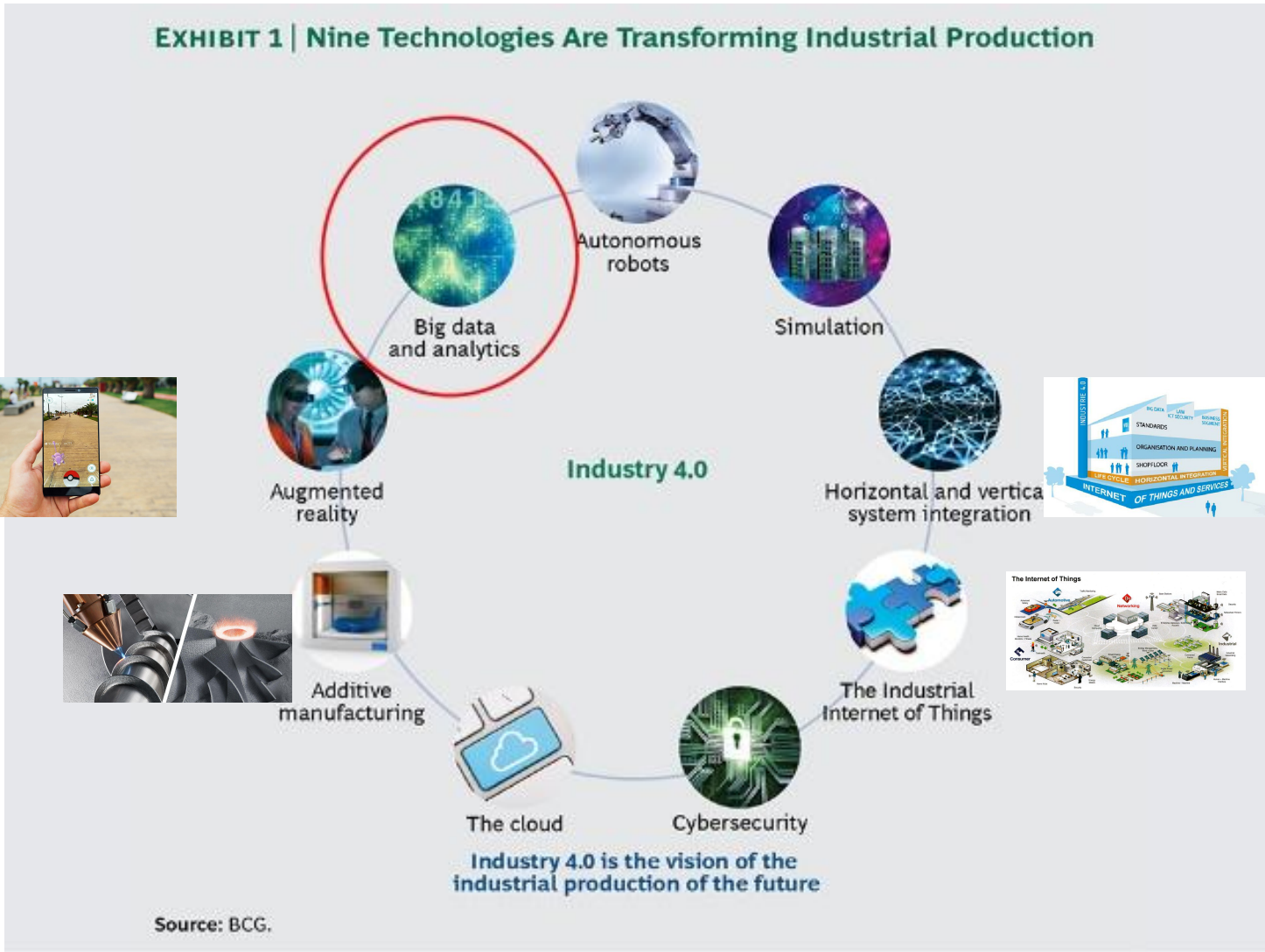CITIZENSHIP COMMON
EDUCATION PROGRAM
FOR INTEGRATED EUROPE

Skills for the Future

Game Changers:

- Artificial intelligence; Robotics; and Nanotechnology.

Skills for the Future

EXHIBIT 1 | Nine Technologies Are Transforming Industrial Production

Big data and analytics

Autonomous robots

Simulation

Horizontal and vertical system integration

The Industrial Internet of Things

Cybersecurity

The cloud

Additive manufacturing

Augmented reality

Industry 4.0

Industry 4.0 is the vision of the industrial production of the future

Source: BCG.

Skills for the Future

Technology	Applications	Impacts
– **Internet of things**	Low-cost sensor networks	Embedding chips in objects and connecting them online, for example Google Glass
	Real-time data collection	Ultra broadband speed allows: improve operations; reducing costs; generating revenue; creating competitive differentiation.
	Monitoring, decision making, and process optimization	
	Widespread application to: Household appliances Factories Smart hardware Wearable Technology Sensor networks Smart devices	Smart Cities: Barcelona, Chicago and Hamburg have benefits in terms of: crime reduction; improved services; better integrated infrastructure with real-time connections; access to data through sensors.
	Can be applied to all economic clusters	

Skills for the Future

– Cloud technology	Use of computer hardware and software resources over a network or over the Internet, often as a service Cloud services include: Software-as-a-Service (SaaS), Platform-as-a-Service (PaaS) Infrastructure as a Service (IaaS)	Resources are massively scalable over the Internet. Rapid market penetration in the provision of services Cloud is an infrastructure that can power markets and make them more competitive.

Skills for the Future

– Artificial intelligence	Intelligent software systems that can perform tasks and that are in permanent learning and improvement. Assistance of medical diagnosis and prescription; In teaching, through interactive programs. Google car prototype.	Multi-level impacts: in the nature of the work, at the level of manufacturing (notably robotics); Analysis of large amounts of data. With task automation, organizations can enrich workers' roles. Creation of new products and services. Change in the way companies and other organizations are structured.

Skills for the Future

• Artificial intelligence

- self-driving cars

Skills for the Future

- Artificial intelligence

- drones

Skills for the Future

- Artificial intelligence

• Virtual assistant

Hi, I'm Sphere Bank's Intelligent Virtual Assistant. How can I help you?

I'm buying a new house, I need help choosing the best mortgage. Can you help? |

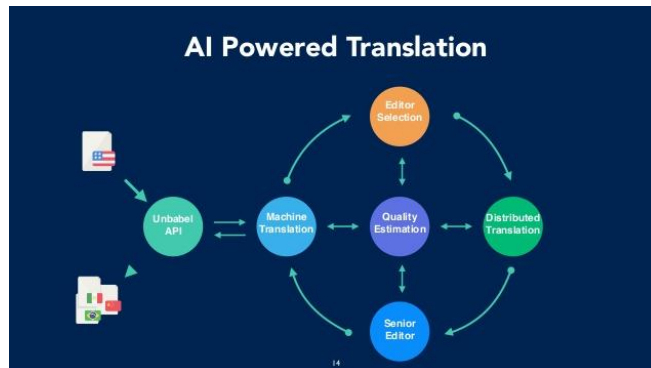# Skills for the Future

- Artificial intelligence

- Translation software

AI Powered Translation

One Click Full Document Translator
Designed to retain your formatting

EASY TO USE
1. Choose Language
2. Click Translate
3. Review

Original Document   Translated Document

Skills for the Future

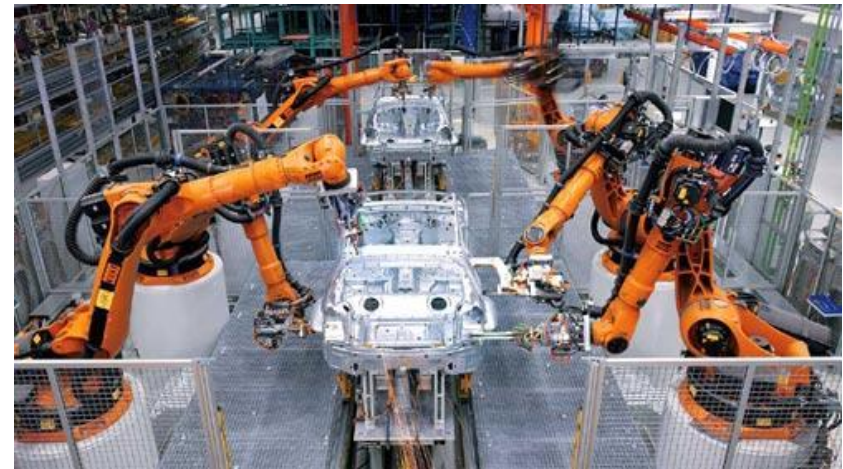|		
− Robotization	In the industry: Robots increasingly with greater dexterity and intelligence used to automate tasks. Vehicles with reduced or no human intervention Advances in interfaces and sensors, with better materials and ergonomic design. In medicine: Robotic surgeries to improve quality; Performing invasive surgeries, which can reduce post-surgical complications.	Lower labor costs. Greater flexibility and reduced delivery time of products to the market. Performing by robots of dangerous tasks (treatment of patients or automate manual work). Productivity growth, higher quality products; safer surgeries and better quality of life for the elderly and disabled. New challenges in employment and education.

Skills for the Future

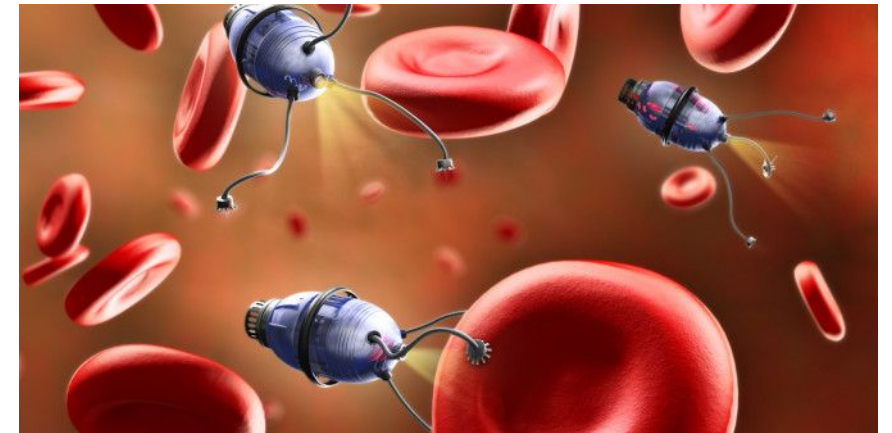- Robotics

In medicine

In the industry

Skills for the Future

Nanotechnology

In medicine

In the space industry

Skills for the Future

Skills for the Future

Critical Skills for the Future:

1. Critical Thinking and Problem Solving

Asking questions is the basis of critical thinking.

It is necessary to know how to ask questions to solve a problem, to obtain answers that allow analyzing and critically questioning what is causing it.

Skills for the Future

Critical Skills for the Future:

2. Collaboration Across Networks and Leading by Influence

Increased focus on global collaboration.

The leadership of a team implies leading by influence and not by authority - influence of groups, creation of alliances with a view to a common goal.

Skills for the Future

Critical Skills for the Future:

3. Agility and Adaptability

We have to be agile and adaptable to the unpredictable consequences of technology.

We need to be continually learning.

Skills for the Future

Critical Skills for the Future:

4. Initiative and Entrepreneurship

Developing a sense of initiative and business skills has not been part of curriculum activities, but:

Are we teaching our students how to lead?

Are we encouraging them to take the initiative?

Are we developing them skills to solve global challenges?

Entrepreneurs try to find workers who consistently seek new opportunities, ideas and new strategies for business growth.

Skills for the Future

Critical Skills for the Future :

4. Initiative and Entrepreneurship

Table 1 - Entrepreneurial skills

Rank	Skills
1	Ability to innovate and be creative
2	Ability to diversify the business area
3	Ability to identify and explore new business opportunities
4	Ability to manage projects
5	Ability and willingness to take risks
6	Ability to organize the resources needed to respond to the opportunity
7	Ability to create and develop national and international networks

Skills for the Future

Critical Skills for the Future :

5. Effective Oral and Written Communication

Communicating clearly is an extension of a clear and logical thought.

Be able to make an argument persuasively.

To be able to inspire others.

To be able to capture concisely the essentials of communication.

Be able to promote yourself or promote a product/service.

Skills for the Future

Critical Skills for the Future:

6. Assessing and Analyzing Information

Learn how to access and select valid information in the digital world.

Know how to evaluate the source and evaluate the content of the information.

Know what is the updated information.

Skills for the Future

Skills Críticos para o Futuro:

7. Curiosity and Imagination

Curiosity is a powerful search engine for new knowledge and innovations.

It is necessary to stimulate the imagination to create new knowledge.

Students need to be encouraged to ask questions and look for answers.

Thinking "out of the box" needs to be considered with the same level of importance as physics or mathematics.