

LUISS Business School

Incontro Unindustria

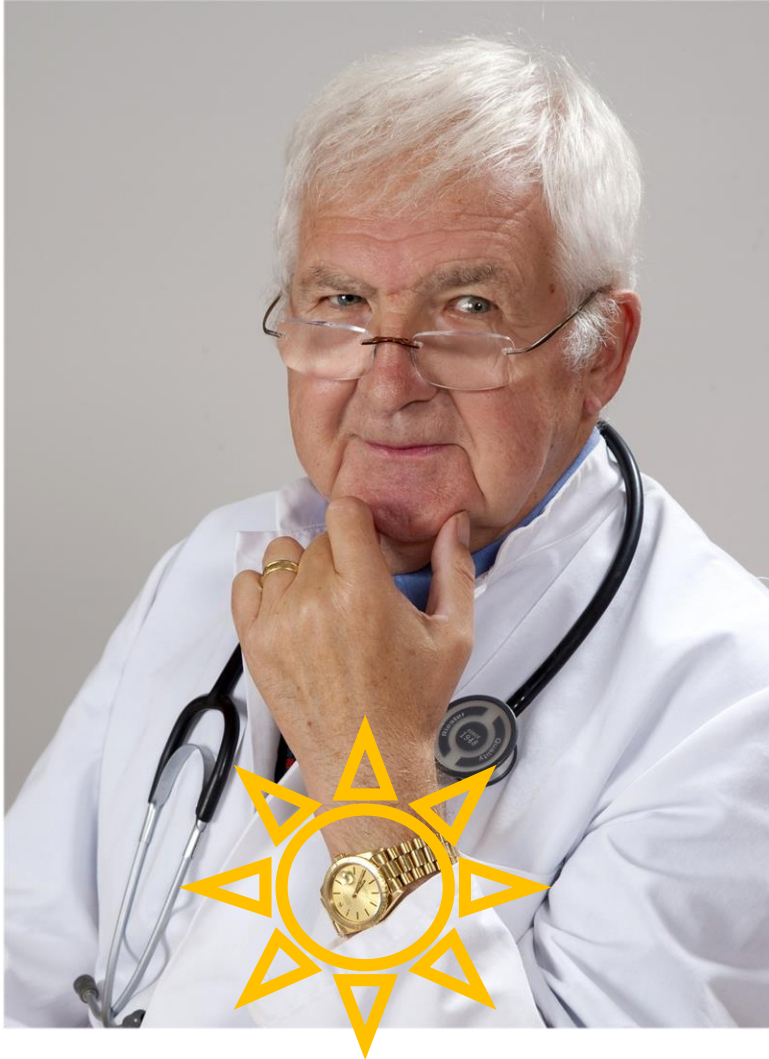
*Skill match e modelli innovativi di
partnership didattiche tra scuola
e impresa*

Leonardo Quattrocchi

*Roma via Noale
26 settembre 2019*



IL MIO ORTOPEDICO



AUTOMATIZZARE LA SUA DIAGNOSI



E LE OPERAZIONI CHIRURGICHE?



OGGI





TRA POCO...



TRA POCO...

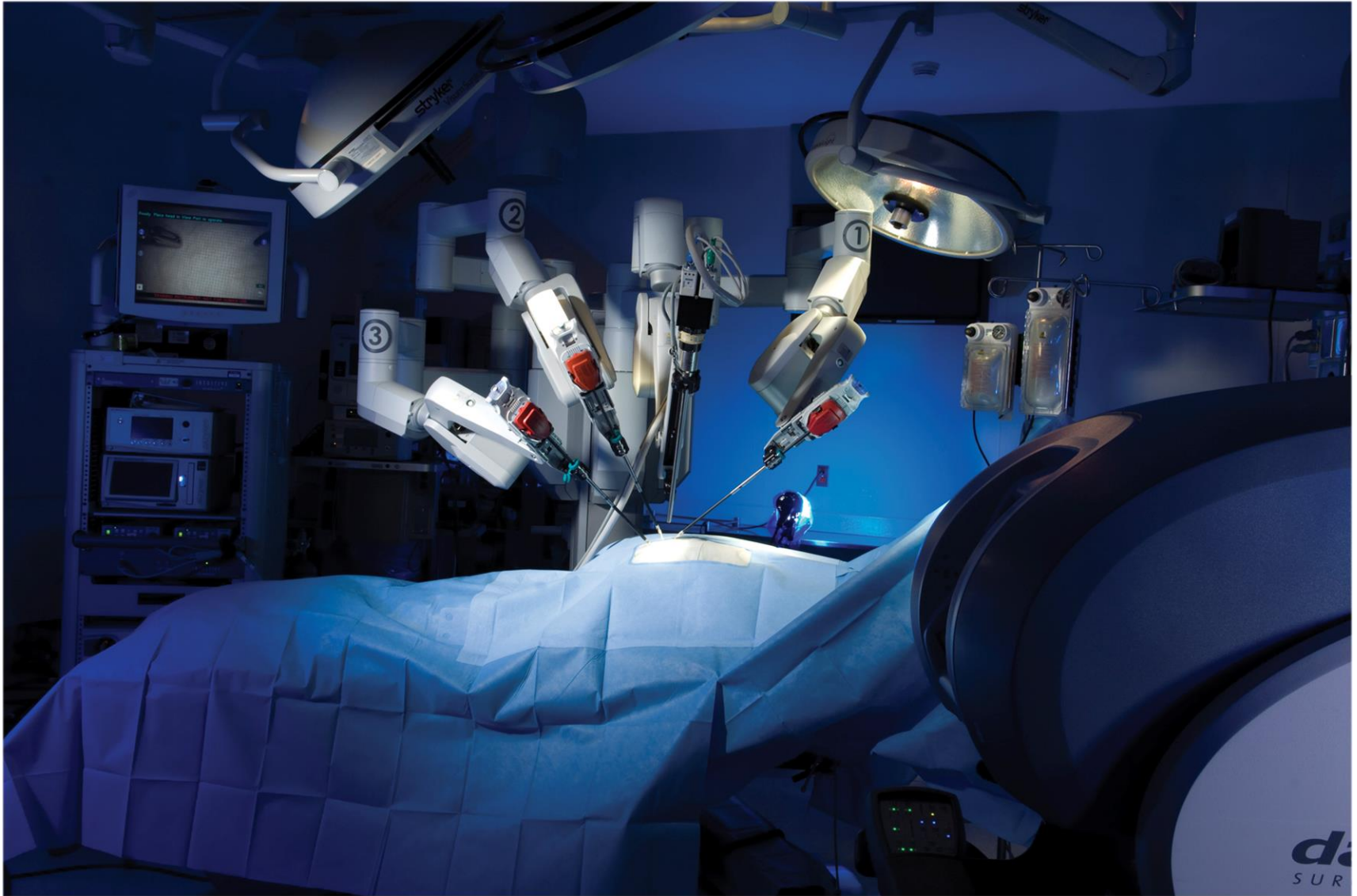


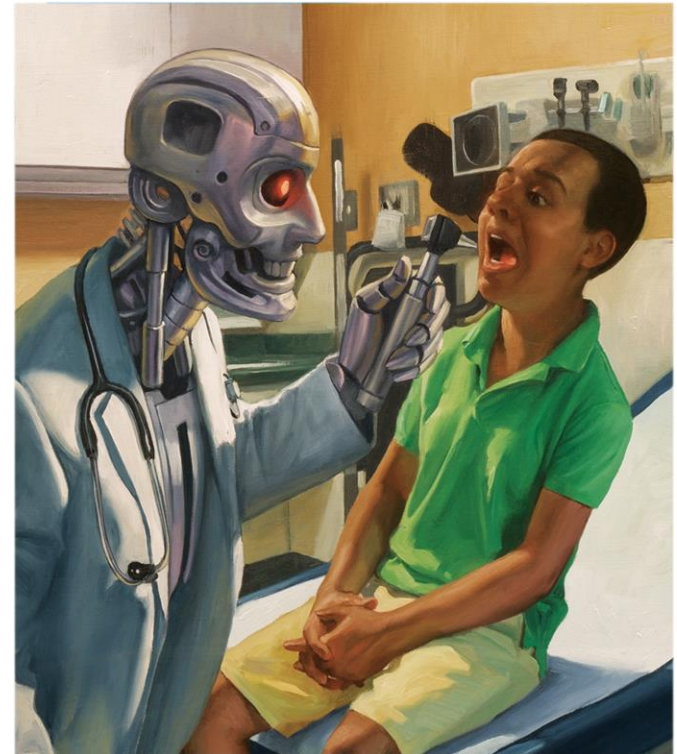
Immagine: DaVinci

INFATTI...



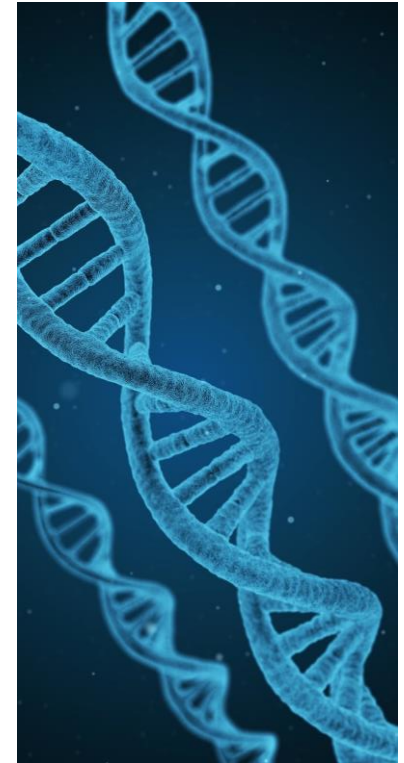
E LE ALTRE ATTIVITÀ MEDICHE?

- Compito dei dottori è fare una **diagnosi** corretta, per poi suggerire il miglior **trattamento**
- Quando si è malati, il dottore incrocia le informazioni che gli diamo sui nostri sintomi con la nostra anamnesi, la sua conoscenza e le malattie compatibili
- Ma anche il dottore più scrupoloso **non può** conoscere tutte le possibili malattie o aver letto tutti i più recenti articoli specialistici sulla materia



E LE ALTRE ATTIVITÀ MEDICHE?

- Un Sistema di AI può avere memorizzato nel suo database **tutte le malattie note al mondo**, correnti e del passato
- Può **aggiornare** i suoi database ogni giorno, non solo con le nuove scoperte ma anche con le statistiche mediche prodotte da ogni ospedale al mondo
- Può conoscere nel dettaglio non solo il mio **genoma** e la mia **anamnesi**, ma anche i genomi e le storie mediche dei miei **genitori**, fratelli, cugini, vicini di casa ed amici
- Sa se ho visitato recentemente un paese tropicale, se ho mangiato qualcosa in un ristorante diverso dal solito.....



Source: Harari, Yuval Noah. Homo Deus . Harper

E LE ALTRE ATTIVITÀ MEDICHE?

- Il “dottore AI” può dirti di prendere una **pillola**, che contiene nano-robot che investigheranno meglio all'interno del mio corpo e, eventualmente, interverranno localmente
- Il mio “dottore AI” può ricavare molte altre informazioni su di me, dal mio **tono di voce**, dalla mia **espressione**, dal mio **battito** e pressione **sanguigna**



ARTIFICIAL INTELLIGENCE · CONTRIBUTORS · FEATURED · HEALTHCARE

HOW WILL AI CHANGE HEALTHCARE? ROBOT-ASSISTED SURGERY AND VIRTUAL NURSES ARE JUST THE START



RYAN AYERS · AUGUST 25, 2019

0 COMMENTS ♥ 0 👁 432 ↗ 0

- **Confezione intelligente** (riutilizzabile)
- Riduzione significativa del costo della sanità
- **Recupero vendite** grazie ad una maggiore aderenza alle prescrizioni mediche (memo ai pazienti tramite SMS o vocali, visite mediche in caso necessario)
- **Spreco eliminato** grazie al riuso del packaging e riciclo della parte cartacea





***"Alcuni cambiamenti sono
così lenti che non te ne
accorgi, altri sono così veloci
che non si accorgono di te"***

ASHLEIGH BRILLIANT



[HOME](#) [EVENTS](#) [DATA SCIENCE](#) [TECH TRENDS](#) [CONVERSATIONS](#) [CAREERS](#) [RESEARCH PAPERS](#)

[ARTIFICIAL INTELLIGENCE](#) · [BI & ANALYTICS](#) · [CONTRIBUTORS](#) · [DATA SCIENCE](#) · [FEATURED](#) · [HEALTHCARE](#) · [INDUSTRY](#) · [PROFESSIONAL SERVICES](#) · [TECH TRENDS](#)

GERMAN RADIOLOGISTS ARE EAGER TO CO-CREATE THE FUTURE OF AI IN THEIR FIELD.



NICHOLAS BORSOTTO · JULY 2, 2019

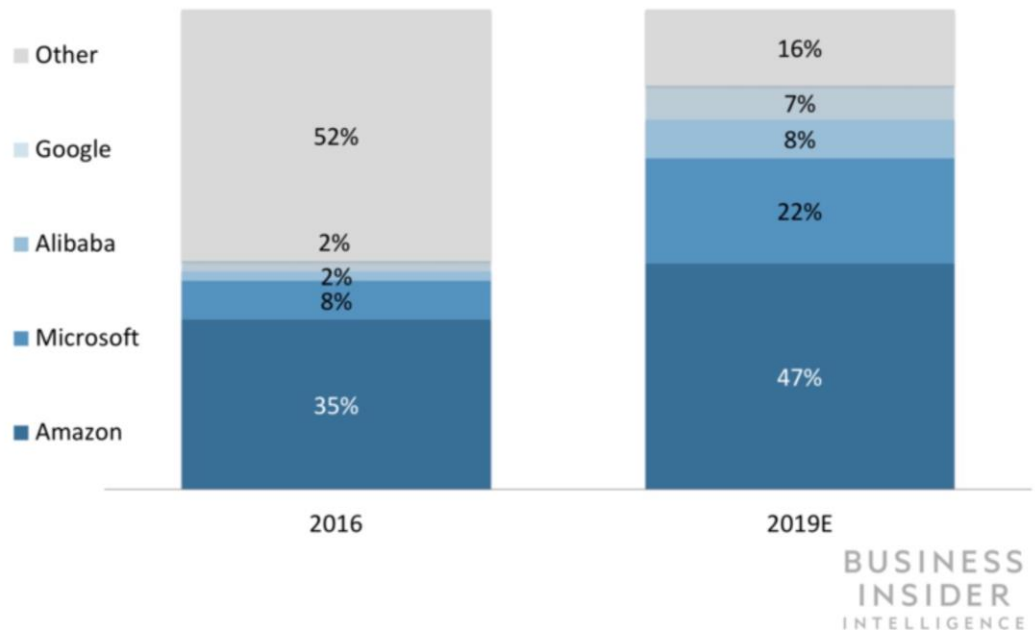
0 COMMENTS

BUSINESS INSIDER
 TECH | FINANCE | POLITICS | STRATEGY | LIFE | ALL
BI PRIME INTELLIGENCE
in

Here's how Microsoft is using healthcare partnerships to buoy its cloud services

Zachary Hendrickson Jul. 9, 2019, 11:06 AM

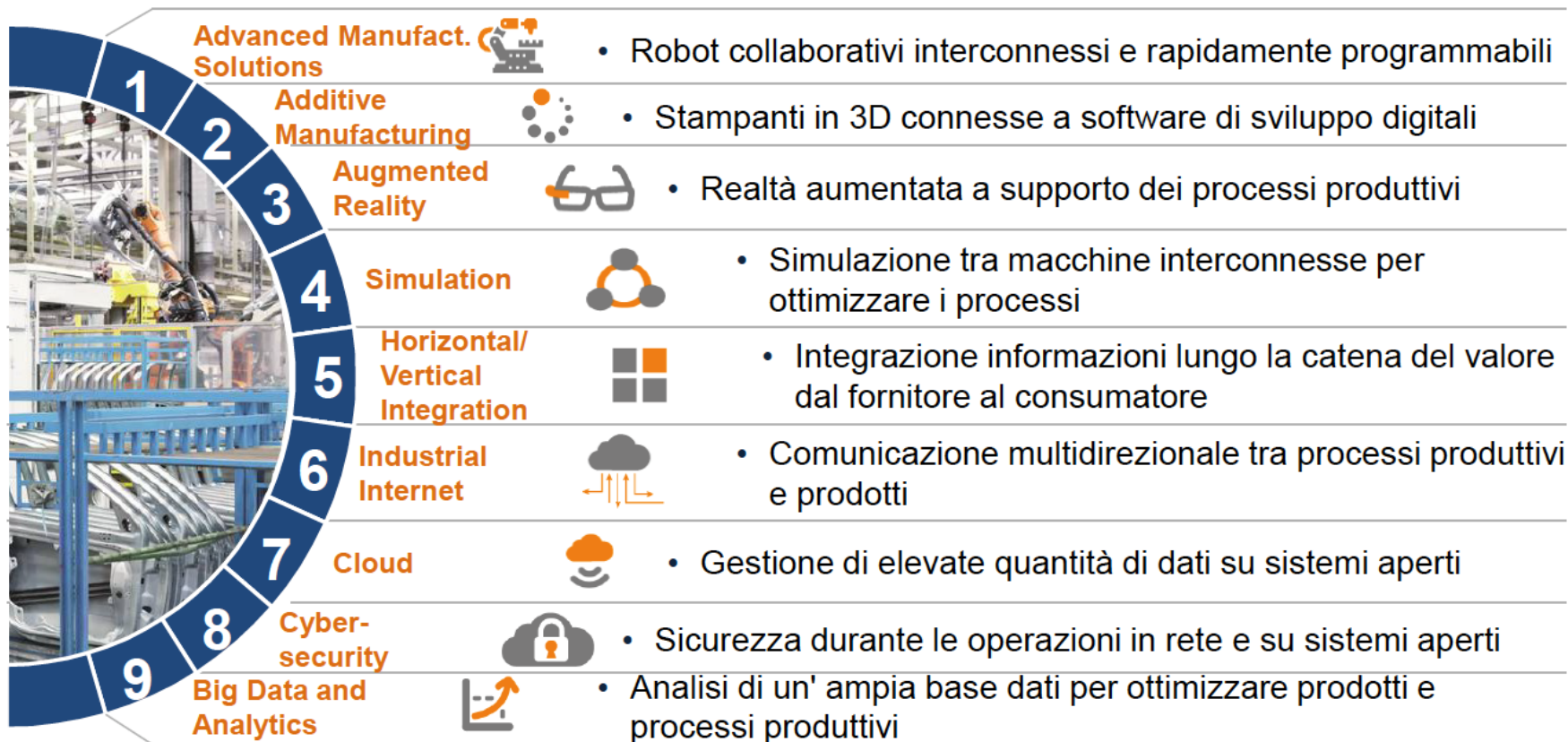
Amazon Controls Nearly Half Of The Global Cloud Market
Public cloud market share



“Piano Nazionale per l’Industria 4.0”



Industria 4.0: Le tecnologie abilitanti



Deloitte.

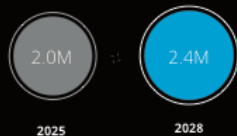
MANUFACTURING Institute

The jobs are here, but where are the people?

Addressing the manufacturing skills gap and influencing a positive future of work

Our studies indicate that the skills shortage is expanding . . .

The skills gap may leave an estimated **2.4 million** positions unfilled and put **\$2.5 trillion** in manufacturing GDP at risk over the next decade.



What's causing the shortage?

Shifting skillsets due to the introduction of **advanced technologies and automation**

Misperceptions of manufacturing jobs

Retirement of baby boomers

What skills are necessary for future success?

Digital skills must marry human skills. **50% of manufacturers** said they have already adopted automation, and the top skills that must accompany technology are critical thinking, programming, and digital.



How can manufacturers positively influence the future of work?

Tapping into the resources from the retiring generation of baby boomers

Developing **in-house training** that engages a multigeneration workforce

Building human-machine collaboration to supplement jobs across the organization

Creating **public-private partnerships**

Bolstering **apprenticeship** programs

Skilled positions take months to fill . . .

It takes more than **2 months** to fill positions for skilled production workers, and more than **4 months** for engineers, researchers, and scientists.



QUALI LAVORATORI CERCHIAMO?





“Behind every machine, I
see a face, indeed many
faces”

Kranzberg

L' ex-CEO di Autodesk,
Carl Bass:

*“The **factory of the future** will have only **two employees**, a man and a dog. The man will be there to feed the dog. The dog will be there to keep the man from touching the equipment”*

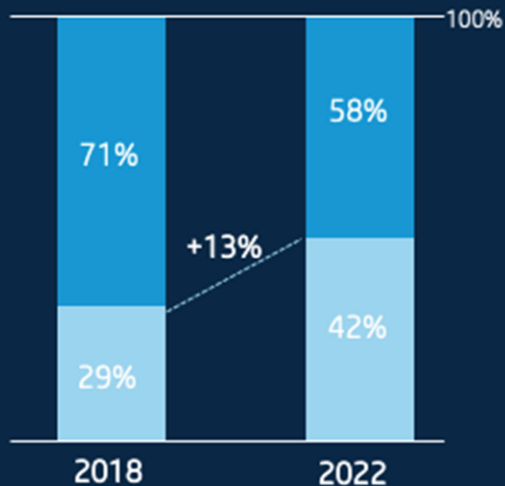


Image: Serpent's hand

AUTOMATION CAN HELP COMBAT LABOR SHORTAGES & INCREASE PRODUCTIVITY

AUTOMATION TAKES OVER MORE OF THE TASK LOAD

- % of Task Hours performed by People
- % of Task Hours performed by Machines



Source: World Economic Forum, Bain, McKinsey

AUTOMATION POTENTIAL DIRECTLY LINKED TO TYPE OF HUMAN TASK – CROSS INDUSTRY PROFILE

- Time Spent By Activity
- Automation Potential, % of Time



Fattibilità tecnica di automazione, %¹

Lavoro fisico predicibile



Es. Saldatura su linea
d'assemblaggio, preparazione cibi,
imballaggio

Lavoro fisico non-predicibile



Es. Edilizia, lavoro boschivo,
allevamento di animali
all'aperto

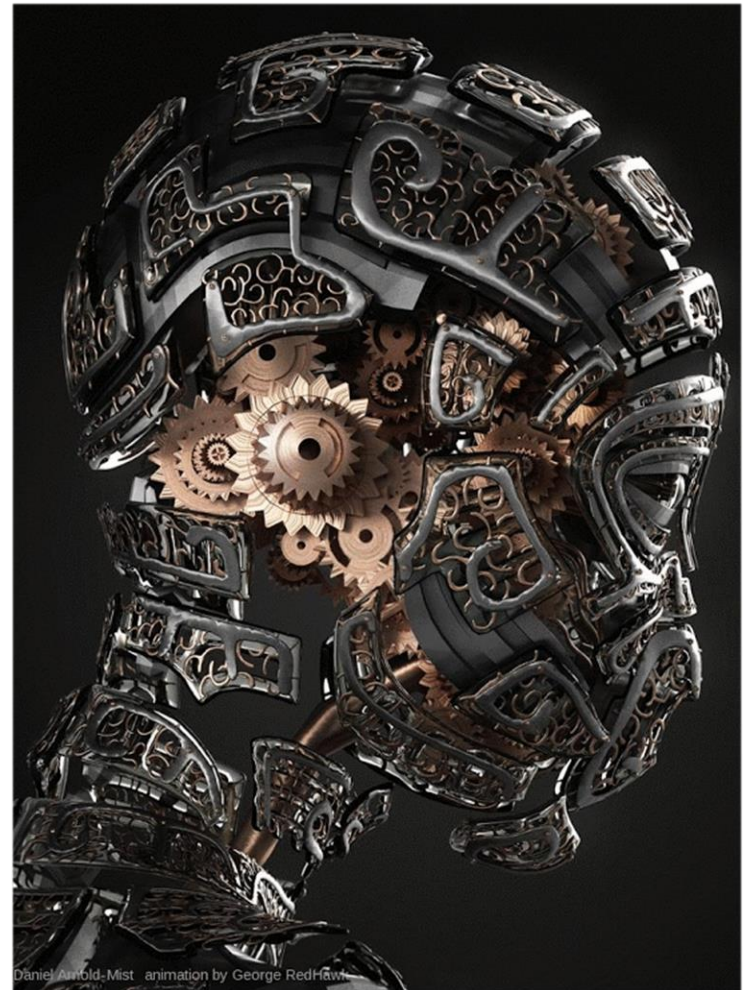
¹% of time spent on activities that can be automated by adapting currently demonstrated technology.

McKinsey&Company

La Prima Legge della
Tecnologia di Melvin
Kranzberg:

**“Technology is neither good
nor bad; nor is it neutral”**

“Technology is capable of
doing great things. But it
doesn't want to do great
things. It **doesn't want
anything**. That part takes all
of us” *Tim Cook, CEO di Apple*



ROBOT: GENERERANNO O RIDURRANNO POSTI DI LAVORO?



Nuove opportunità di
lavoro per l'ingegneria
e sistemistica robotica

35%

28%

Robot sostituiscono
lavoratori

Source: PwC and Zpryme survey and analysis, "2014 Disruptive Manufacturing Innovations Survey," conducted in February 2014. Q: What will be the biggest impact of robots on the US manufacturing workforce in the next 3–5 years?
Number of respondents: 105.

Fonte: PwC and ZprymeUK

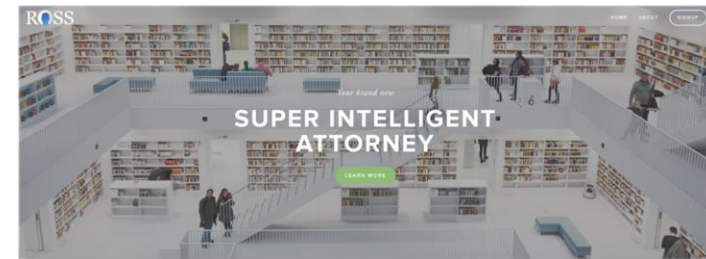
La Sindrome di Pasquale



- **La Digital disruption colpisce anche le professioni:** dottori, avvocati, insegnanti e amministrativi
- Il Deep learning, i Sistemi Esperti, i Software Agents, l'elaborazione delle immagini e del linguaggio, la moneta digitale e l'Internet of Things mirano direttamente alla conoscenza, l'apprendimento e l'entertainment

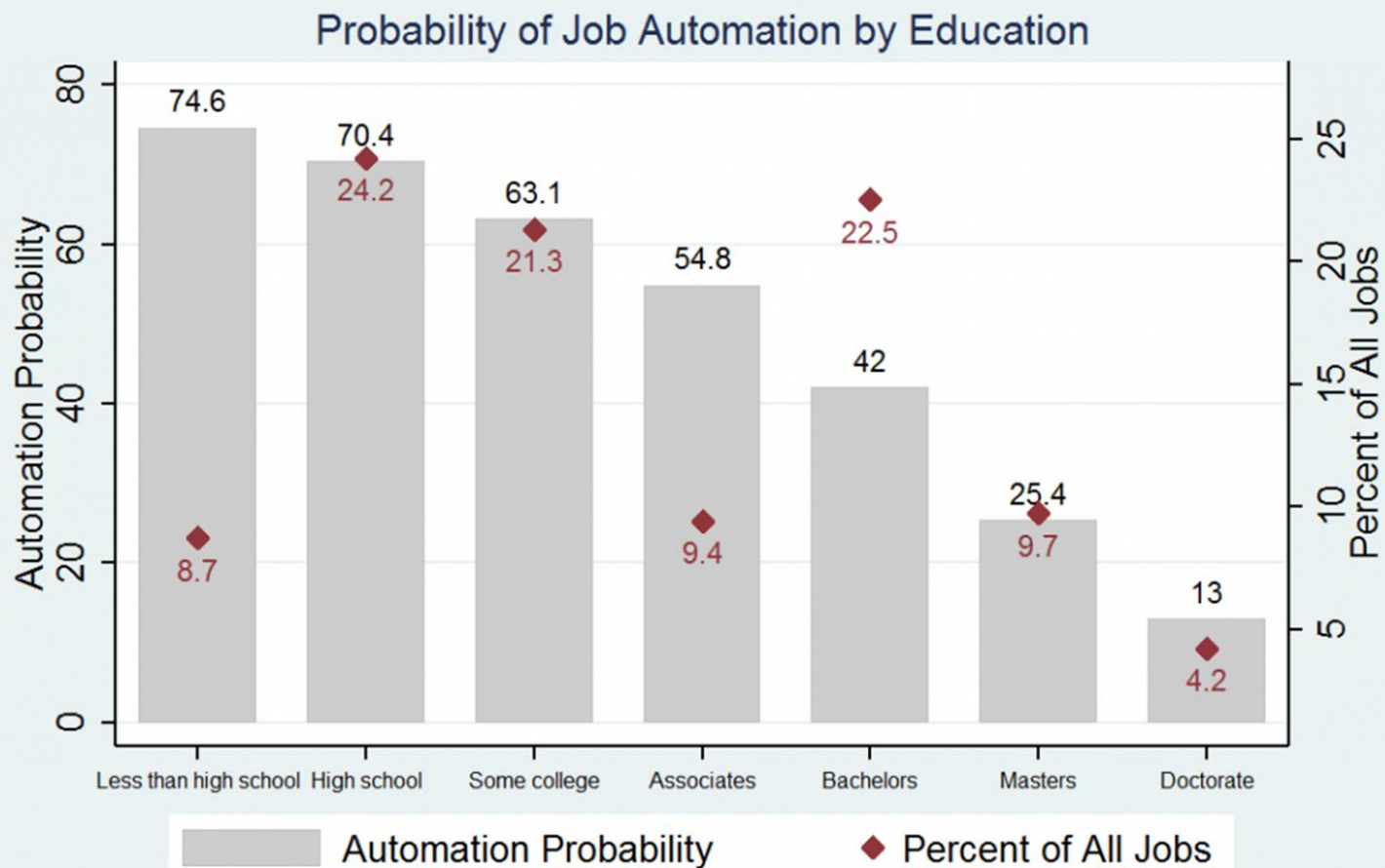


- Un avvocato AI è un **consulente legale digitale che usa il deep learning** per emulare e superare le prestazioni di un legale umano. ROSS, basato su Watson IBM, può **ricercare informazioni** tra **oltre un miliardo di documenti** testuali, analizzarle e fornire **risposti in meno di 3 secondi**
- Compila automaticamente un sommario dei risultati e migliora con l'esperienza, poiché controlla in tempo reale le sentenze e ne informa l'utente nel caso siano pertinenti al caso in esame
- BakerHostetler, uno studio legale USA, ha "assunto" ROSS per lavorare assieme al suo team di protesti e fallimenti di oltre 50 avvocati umani



QUALI COMPETENZE E SKILL

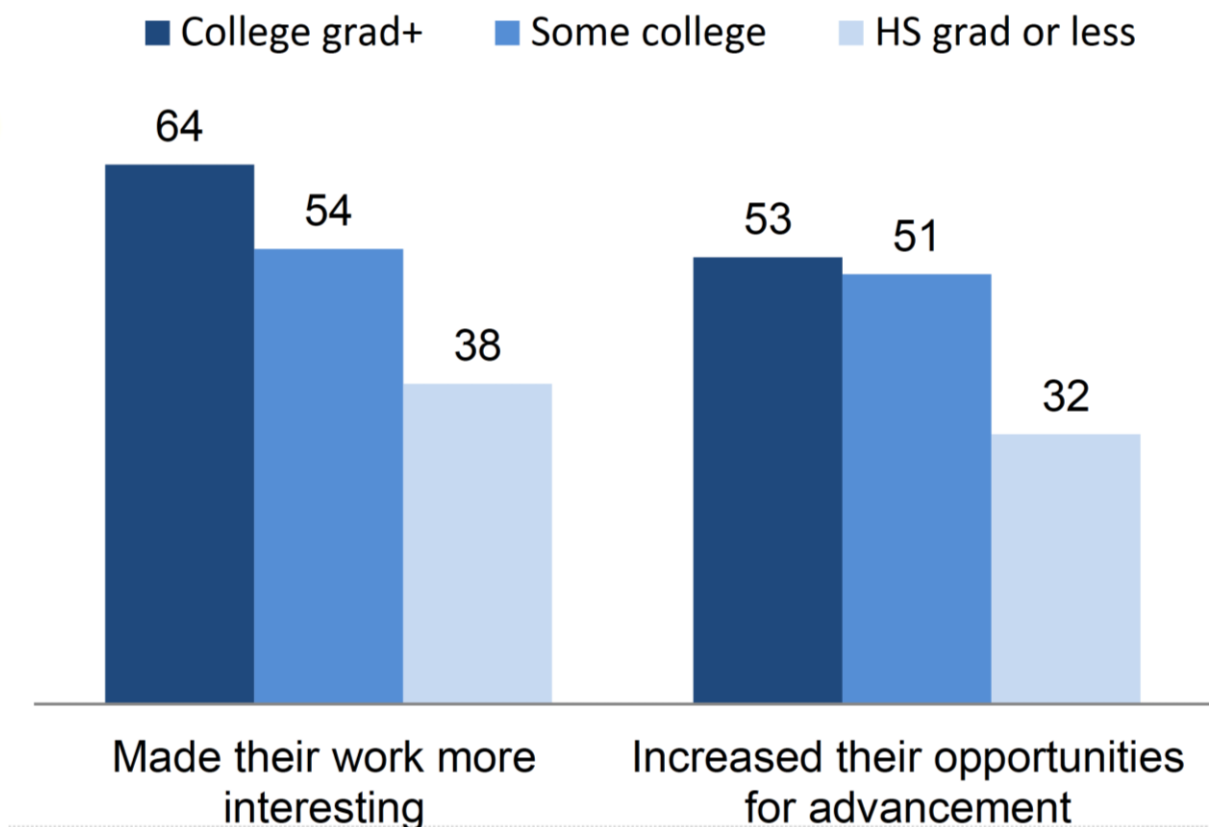




Note: 2014 data. All workers 25 and older. Expected automated jobs are based on 752 detailed occupations covering 99% of total employment.
Sources: Frey and Osborne (2013), BLS, ISEA

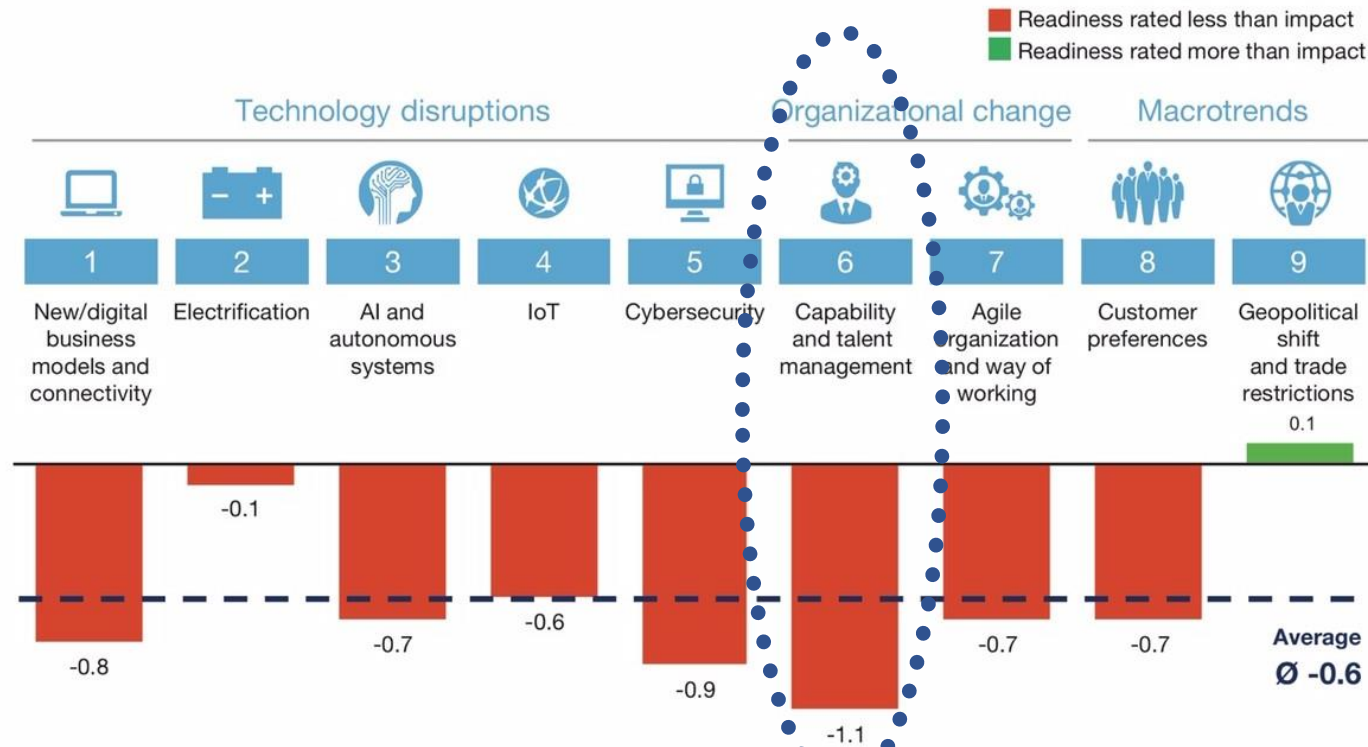
LIVELLI EDUCATIVE E OPPORTUNITÀ DI LAVORO

In un survey, ai lavoratori è stato chiesto se **un livello di istruzione superiore** renderebbe il loro lavoro più interessante o genererebbe opportunità di miglioramento



GAP ANALISI DELLA DIGITAL TRANSFORMATION

Gap analysis of respondents' expected impact¹ and readiness²

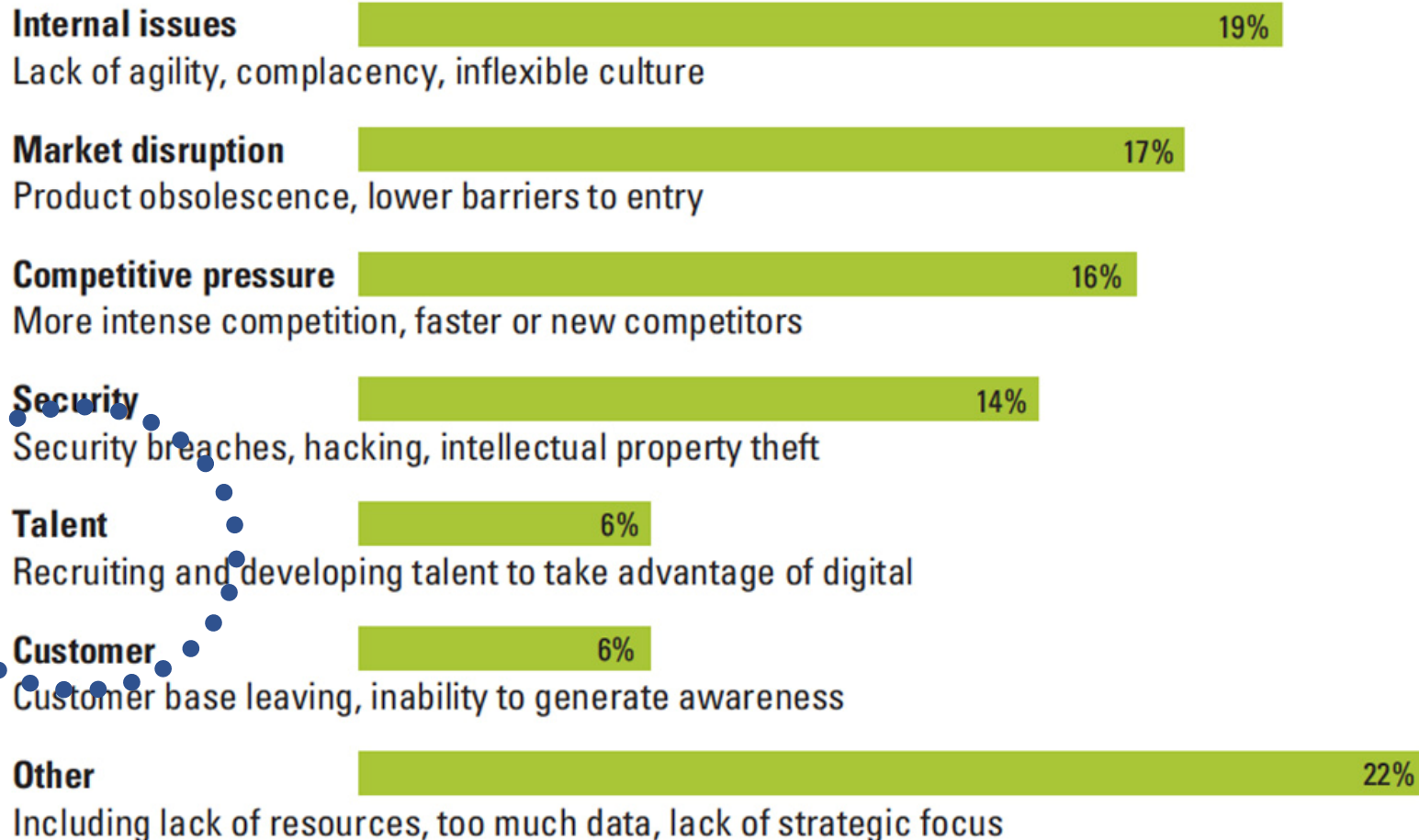


- 1 Impact on business (e.g., sales, EBIT, strategic priority, competitive position); from 1 (not affecting business) to 5 (affecting at least half of the business)
- 2 Answer options: 1 = no measures so far, 2 = assessment available, 3 = strategy in place, 4 = strategy in place, pilot initiatives started, 5 = holistic program/transformation started

SOURCE: McKinsey

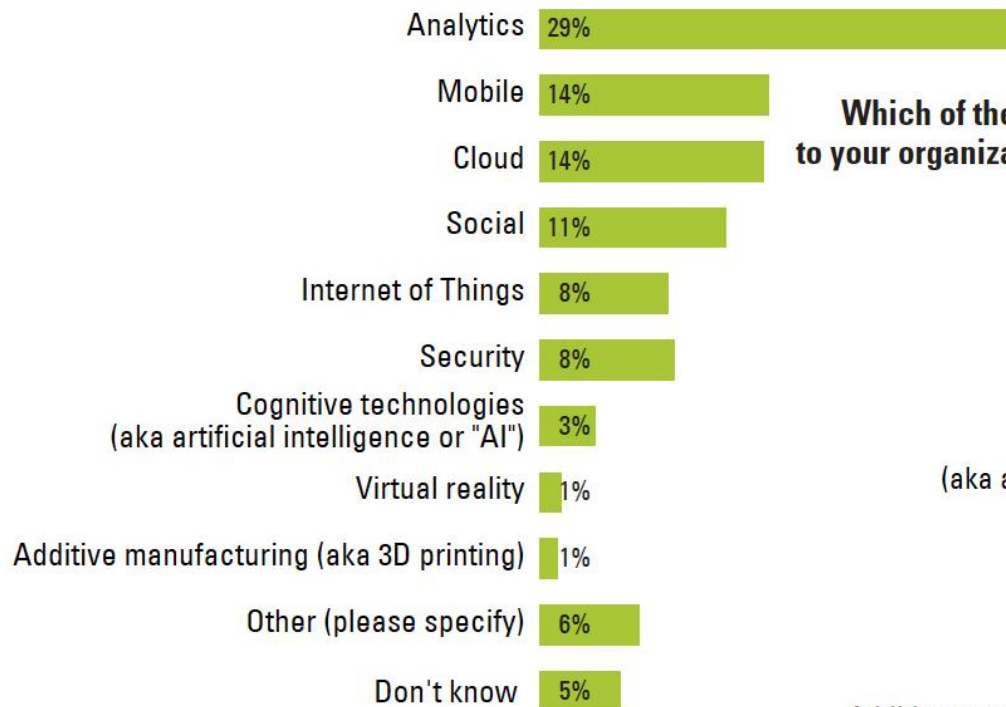
The gap between readiness and impact is substantial in most areas with capability and talent management as well as cybersecurity displaying the largest gap of all.

What is the biggest threat facing your company as a result of digital trends?



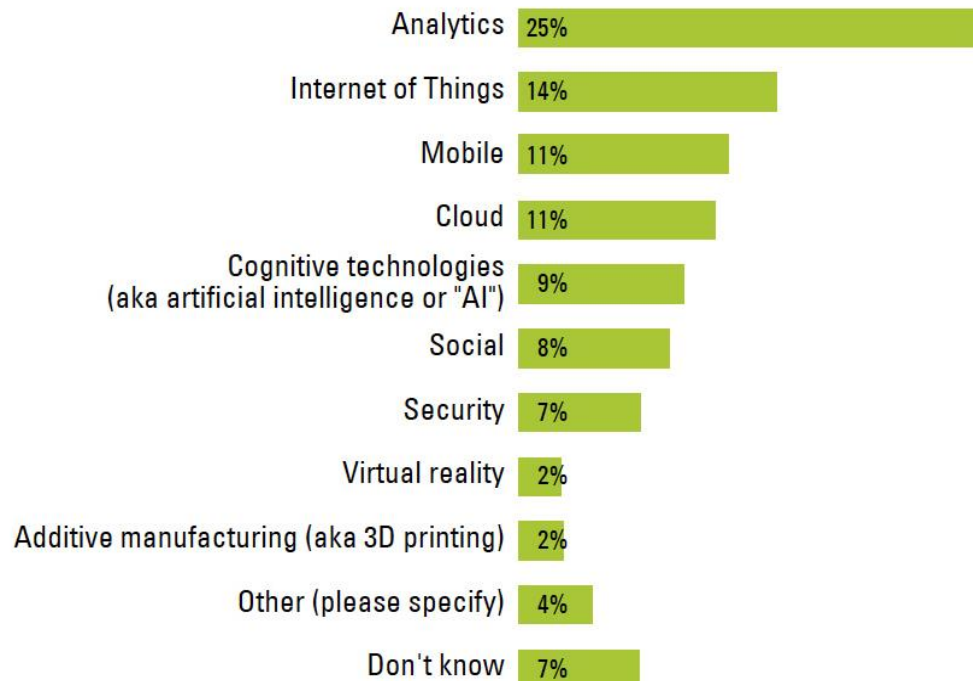
Graphic: MIT Sloan Management Review/Deloitte University Press | DUPress.com

Which specific technology is the most important to your organization this year?



Graphic: MIT Sloan Management Review/Deloitte Univers

Which of the following specific technologies will be the most important to your organization in the next 3 to 5 years?



Graphic: MIT Sloan Management Review/Deloitte University Press | DUPress.com

How can manufacturers positively influence the future of work?

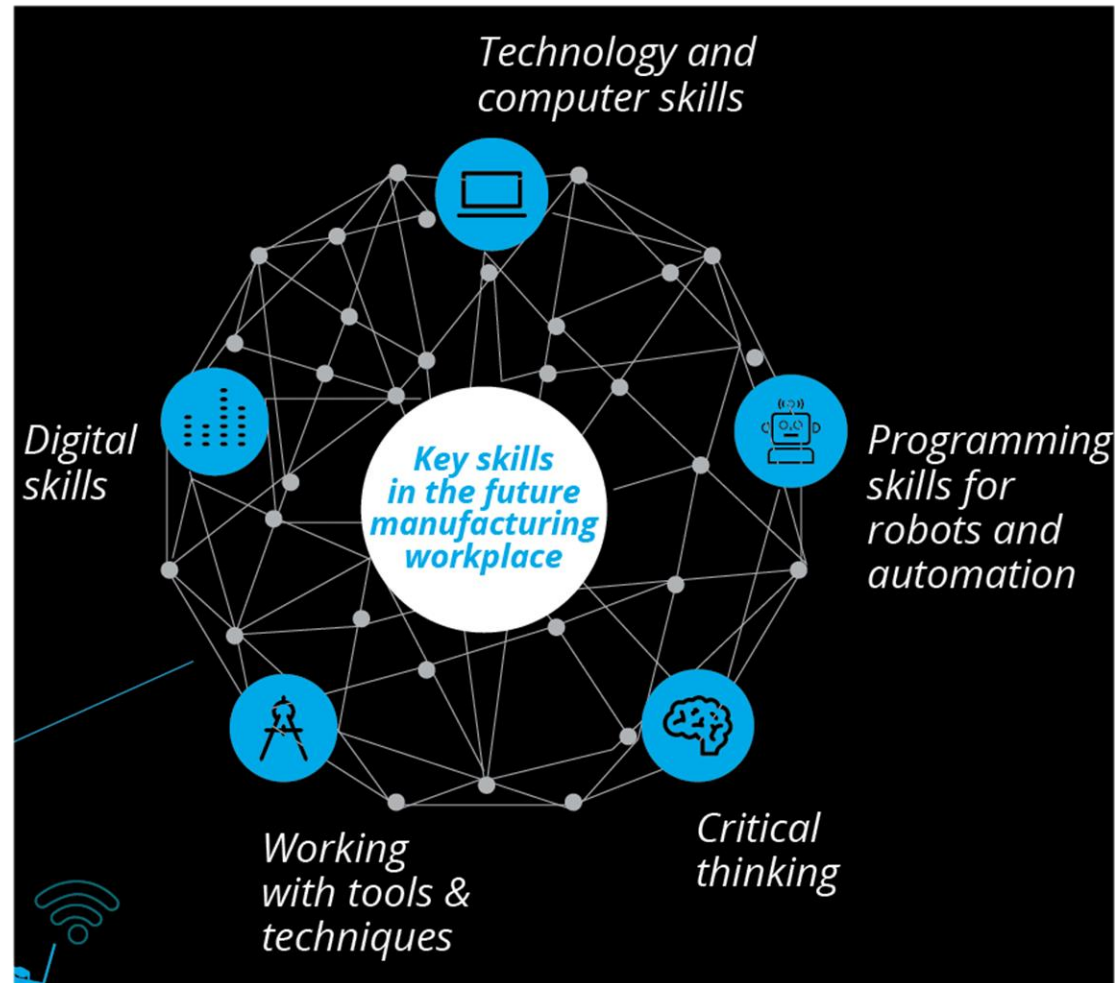
Tapping into the resources from the retiring generation of **baby boomers**

Developing **in-house training** that engages a multigeneration workforce

Building human-machine collaboration to supplement jobs across the organization

Creating **public-private partnerships**

Bolstering **apprenticeship** programs



OVERCOME LABOR SHORTFALLS

Changing demographics and a shrinking working age population is driving a rising labor gap

By 2030 ...

16%

High-skilled workers gap in Tech, Media and Telecommunications

900X

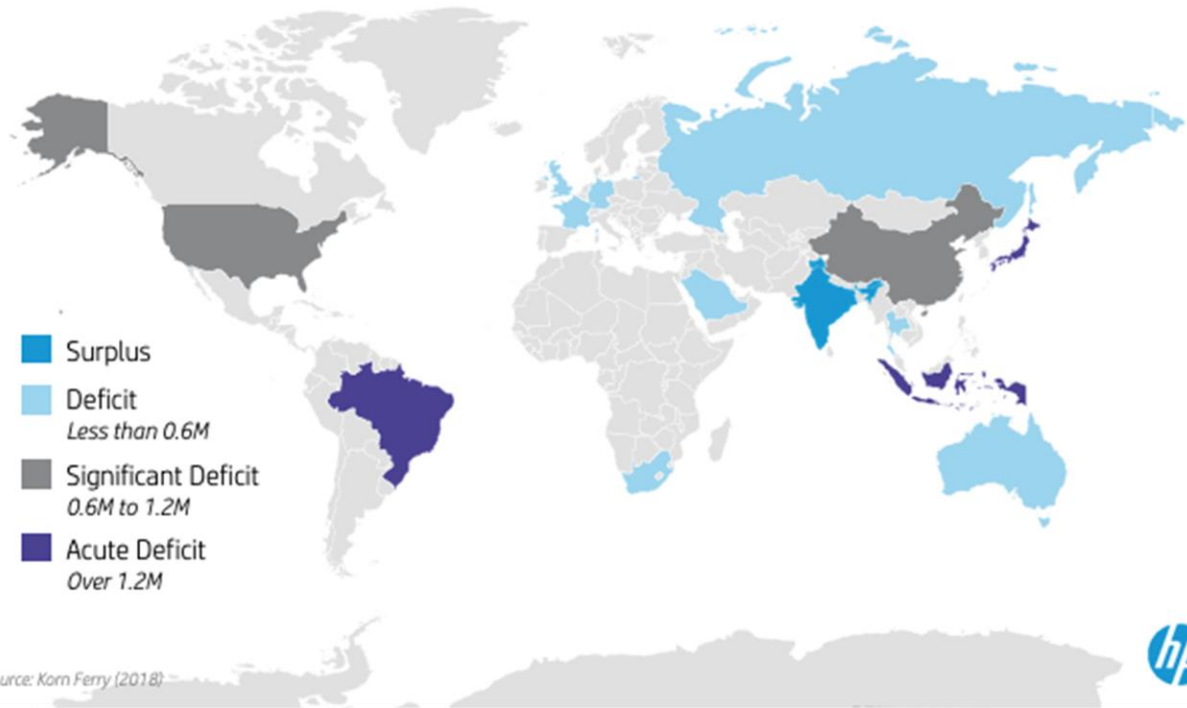
Alphabet, Inc's current workforce required to fill 2030 gap



India - only major economy with a high-skilled labor surplus

GLOBAL HIGH SKILL LABOR DEFICIT BY ECONOMY (2030)

(Based on top 20 markets evaluated to date)



IMPACT ON INDUSTRIES AND BUSINESSES

- Think about how labor shortages might effect your workforce, and your customers
- Consider how labor markets are changing in the areas where your employees are located
- Examine ways that you could use automation and reskilling to combat these shortages before they impact your business

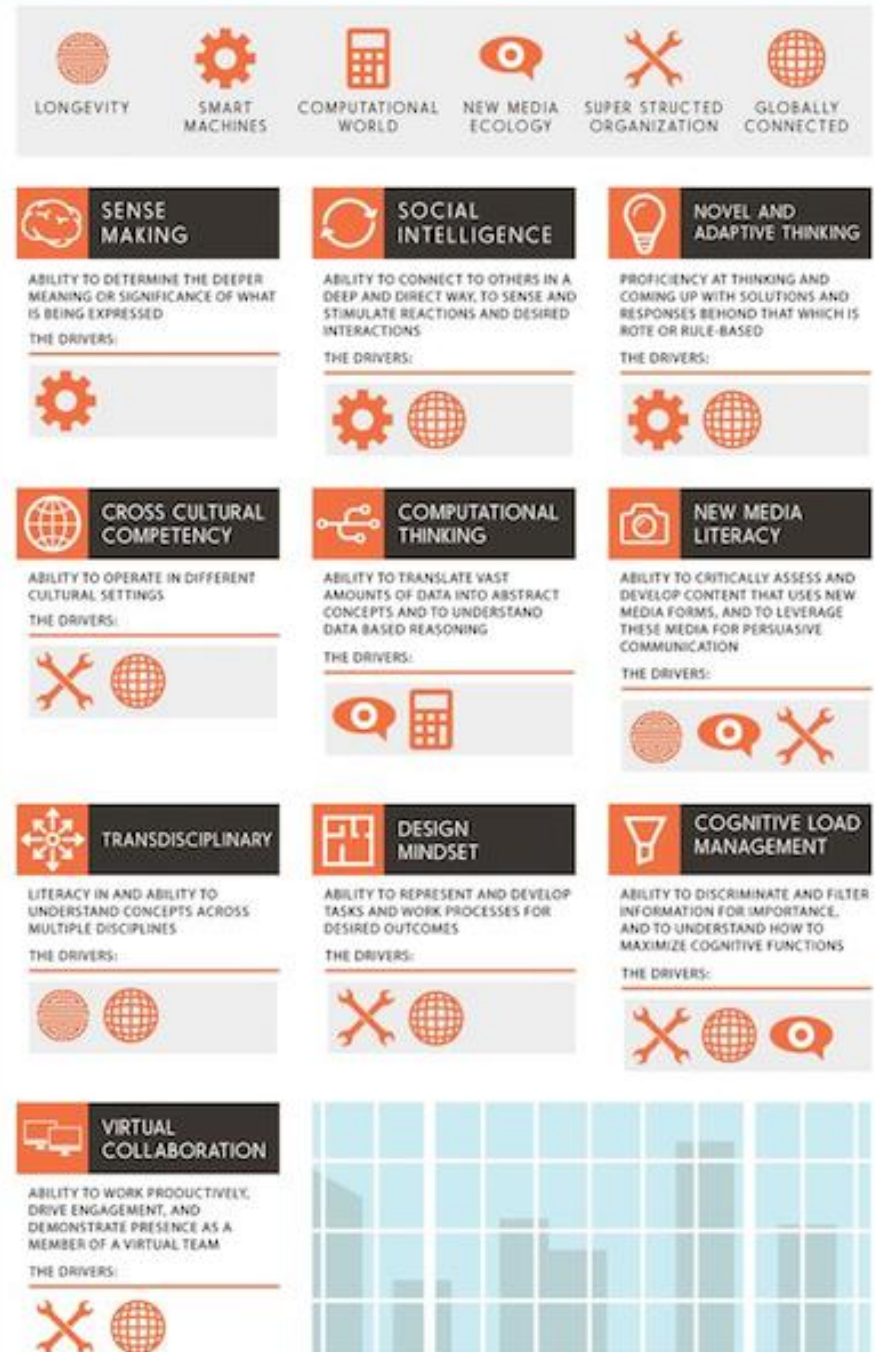


PROFESSIONI E LAVORO

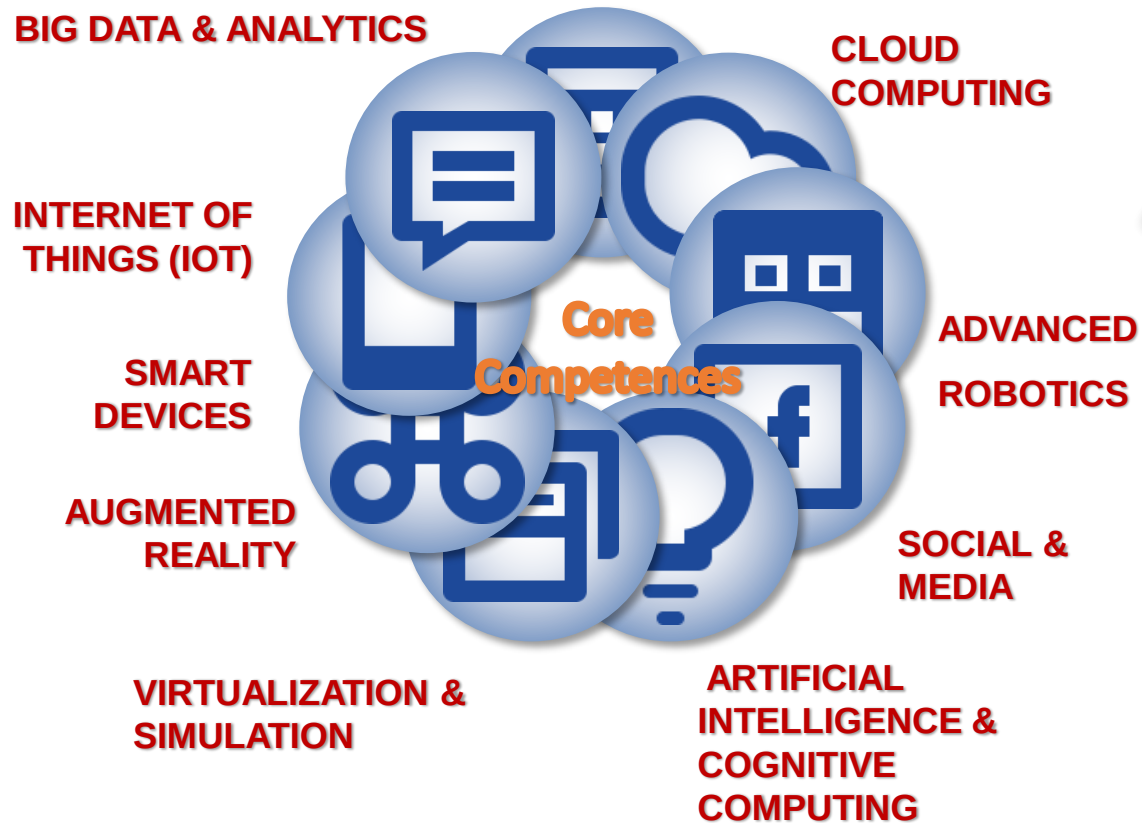
- Molte delle **skills professionali** richieste nel prossimo futuro sono un **mix di competenze diverse**

Fonte: cdn.theatlantic.com

FUTURE WORK SKILLS OF 2020:



COMPETENZE T-SHAPED



UN ESEMPIO: SOLO GIOCATTOLI?



**DRONES
FOR
KIDS**

GIOCATTOLI? ARMI



Source: General Atomics, MBDA

GIOCATTOLI? PUBBLICITÀ

TIME



Source: Time

GIOCATTOLI? GESTIONE MAGAZZINO CON DRONI



LEA PLATFORM FOR IOT
DRONE EXPERIENCE

CORRIERE DELLA SERA

I videogame nel curriculum

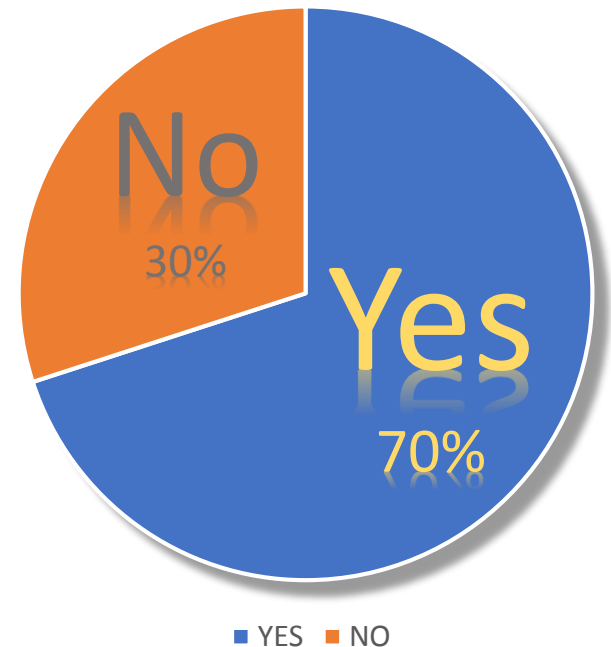
di Federico Cella

Alcune delle capacità sviluppate grazie ai giochi possono servire sul lavoro La RAF: «Coordinare azioni di gruppo e restare calmi sotto pressione, spesso sono abilità dei bravi giocatori»



SERVONO NUOVI TALENTI E NUOVI PROGRAMMI EDUCATIVI?

“In the next 10 years, do you think we will see the emergence of **new educational and training programs** that can successfully train large numbers of workers in the **skills they will need to perform the jobs of the future?**”



SERVONO NUOVI TALENTI E NUOVI PROGRAMMI EDUCATIVI?

Theme 1) The training ecosystem will evolve, with a **mix of innovation in all education formats**

Theme 2) Learners must cultivate **21st-century skills, capabilities and attributes**: Tough-to-teach intangibles such as emotional intelligence, curiosity, creativity, adaptability, resilience and critical thinking will be most highly valued

Theme 3) **New credentialing systems** will arise as self directed learning expands

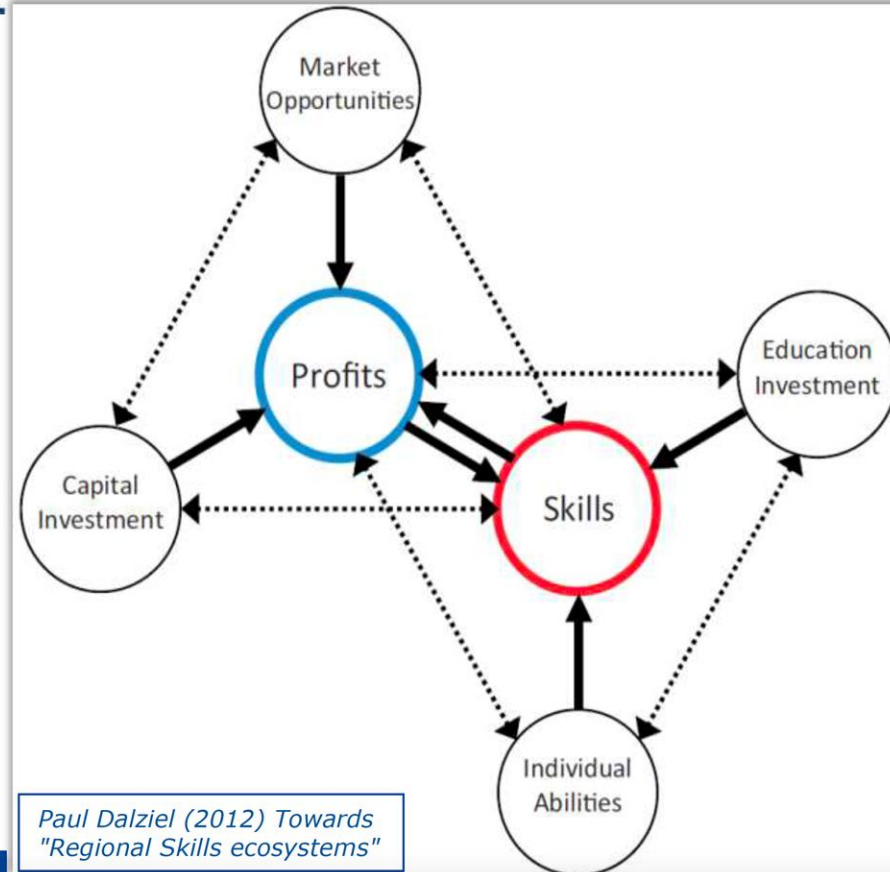
A model for "Regional skills ecosystems"



Different groups of actors (individuals, educators, employers and policy advisors) must be motivated by mutually reinforcing advantages for a high skill ecosystem to flourish

Addressing the "**coordination problem**" within a **skill ecosystem**, which arises from employers making capital investment decisions separately from the education investment decisions of current and potential employees.

This separation means employers can be constrained by skill gaps in the labour force while potential workers can waste time and financial resources by investing in education that is out-of-date or produces skills for which there is no employer demand.



Paul Dalziel (2012) Towards "Regional Skills ecosystems"



ALCUNI DEI MASTER LUISS

Master di I° livello

Digital Marketing – Major del Master in Marketing Management

ITALIANO

MILANO

Master di I° livello

**Energy Industry
Major del Master in Management and Technology**

ITALIANO

Master di II° livello

Executive Master in Circular Economy Management

ITALIANO

Master di I° livello

Big Data and Management

INGLESE

Master di I° livello

**Energy Industry
Major of Management and Technology**

INGLESE

Master di I° livello

**Digital Export
Major of the Master in Marketing Management**

ITALIANO

Master di I° livello

**Digital Ecosystem –
Major of Management and Technology**

INGLESE

Master di I° livello

Open Innovation & Intellectual Property

ITALIANO

MILANO

Master di I° livello

**Digital Business Strategy
Major del Master in Management and Technology**

ITALIANO

ALCUNI CORSI EXECUTIVE LUISS BS

LEGAL WEB

DURATA



2 INCONTRI; 9
ORE DI

ROMA: 13/12/2019

MILANO: 31/01/2020

[SCARICA LA BROCHURE](#)

INNOVATION MANAGEMENT AND OPERATION TECHNOLOGY (MIOT 4.0)

DURATA



8 MODULI

ROMA: 10/05/2019

[SCARICA LA BROCHURE](#)

DIGITAL MARKETING BASICS

DURATA



14 INCONTRI; 66

ROMA: 29/11/2019

MILANO: 20/12/2019

EMIT X – EXECUTIVE PROGRAMME DIGITAL INNOVATION & GOVERNANCE

DURATA



18 MESI

ROMA: 06/03/2020

[SCARICA LA BROCHURE](#)

NEW MARKETING

DURATA



2 INCONTRI (9
ORE DI

ROMA: 22/11/2019

MILANO: 29/11/2019

[SCARICA LA BROCHURE](#)

WEB ANALYTICS: LA MISURAZIONE DEI RISULTATI

DURATA



4 INCONTRI; 18

ROMA: 29/11/2019

MILANO: 17/01/2020

[SCARICA LA BROCHURE](#)

PERCHÈ E' IMPORTANTE INSERIRE NUOVI TALENTI E FAR CRESCERE QUELLI INTERNI CON LA TRASFORMAZIONE DIGITALE

- Per individuare **nuove modalità di creazione del valore**
- Per individuare e perseguire **nuovi segmenti di mercato**
- Per essere **competitivi** a livello nazionale ed internazionale
- Per creare **maggior valore** nei prodotti/servizi correnti, in maniera diversa da oggi
- Per essere al passo con la tecnologia





AuToMa

AUTOMATION, TECHNOLOGY TRANSFER AND
MANAGERIAL PRACTICES FOR THE GROWTH
OF SMES, A BETTER EMPLOYABILITY AND THE
PROMOTION OF THE ENTREPRENEURSHIP

WELCOME TO THE OFFICIAL WEB PAGE OF AUTOMA PROJECT!

The project "Automation, Technology transfer and Managerial practices for the growth of SMEs, a better employability and the promotion of the entrepreneurship" (Project Ref. №: 2016-1-ITO1-KA202-005599) under the ERASMUS+ Programme gathers 5 partners from 5 EU countries.



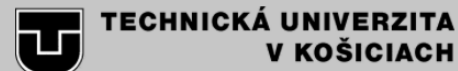
AuToMa

AUTOMATION, TECHNOLOGY TRANSFER AND
MANAGERIAL PRACTICES FOR THE GROWTH
OF SMES, A BETTER EMPLOYABILITY AND THE
PROMOTION OF THE ENTREPRENEURSHIP



Co-funded by the
Erasmus+ Programme
of the European Union

PROJECT PARTNERS



NEW METRO



SFC - Sistemi Formativi
Confindustria



Rezekne Academy of
Technologies



Generalitat de Catalunya
Departament
d'Educació



GLS



FEDERMECCANICA

FEDERMECCANICA



Poznan School of Logistics

KOHLER®
IN POWER. SINCE 1920.

Kholer - Lombardini s.r.l.

Raben

*your partner
in logistics*

Raben



Imperial
logistics

Imperial Logistics



Nova Tracking



CIS - Unindustria Reggio
Emilia



HELLENIC REPUBLIC
UNIVERSITY OF IOANNINA



Uoi - University of Ioannina



Regione Emilia-Romagna



Unindustria Reggio
Emilia

FH JOANNEUM
University of Applied Sciences

FH JOANNEUM

VOLKSWAGEN
GROUP POLSKA

Volkswagen Group
Polska (VGP)

NEW METRO

NEW METRO aims to

- **overcome** the **mismatch skill** and **improve employability** in Mechatronics in I4.0 scenarios, outlining an innovative competence framework valid at European level
- raise awareness among key stakeholders about social and organizational changes related to new modes of production
- involve regulatory bodies and stakeholders at regional and European level
- strengthen young students orientation towards VET high training courses, guaranteeing a skill qualification system approved by European legislation and **useful to industry**



Co-funded by the
Erasmus+ Programme
of the European Union



UNA RIVOLUZIONE INDUSTRIALE? NON SOLO!

Una rivoluzione **tecnologica**

Una rivoluzione **mentale**

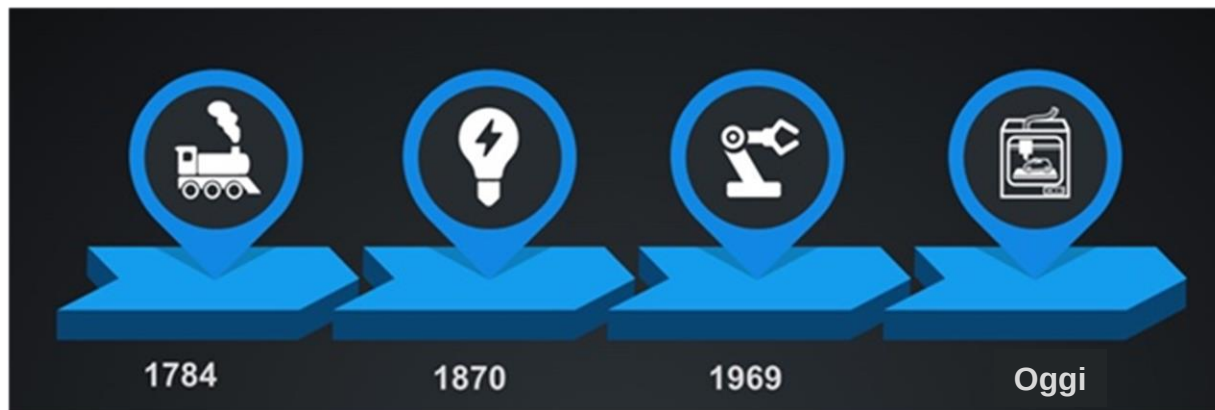
Una rivoluzione politica

Una rivoluzione delle **competenze**

Una rivoluzione spirituale

Una rivoluzione etica

Una rivoluzione **globale**



Ronfanztztzstanchenoia!



Grazie per l'attenzione



Leonardo Quattrocchi
lquattrocchi@luiss.it
Cell +393356421553

*If you're teaching today what
you were teaching five years
ago, either the field is dead or
you are*

Noam Chomsky



LUISS Business School
Villa Blanc
Via Nomentana, 216
Roma