

**ARTIFICIAL
INTELLIGENCE
FOR ECONOMIC
GROWTH**


accenture

AI SOLVES THE KEY BUSINESS CHALLENGES

AI ESTABLISHES A NEW RELATIONSHIP BETWEEN PEOPLE AND MACHINES, CREATING NEW FACTORS OF PRODUCTIVITY AND GROWTH



SLOW GROWTH

Since the 1980s, GDP growth has slowed in many large economies



WEAK PRODUCTIVITY

Total factor productivity has weakened in the past 10 years



FALLING CAPITAL EFFICIENCY

The marginal capital efficiency rate has dropped over 50 years



AGING WORKFORCE

As populations age and birth rates slow, fewer people are available

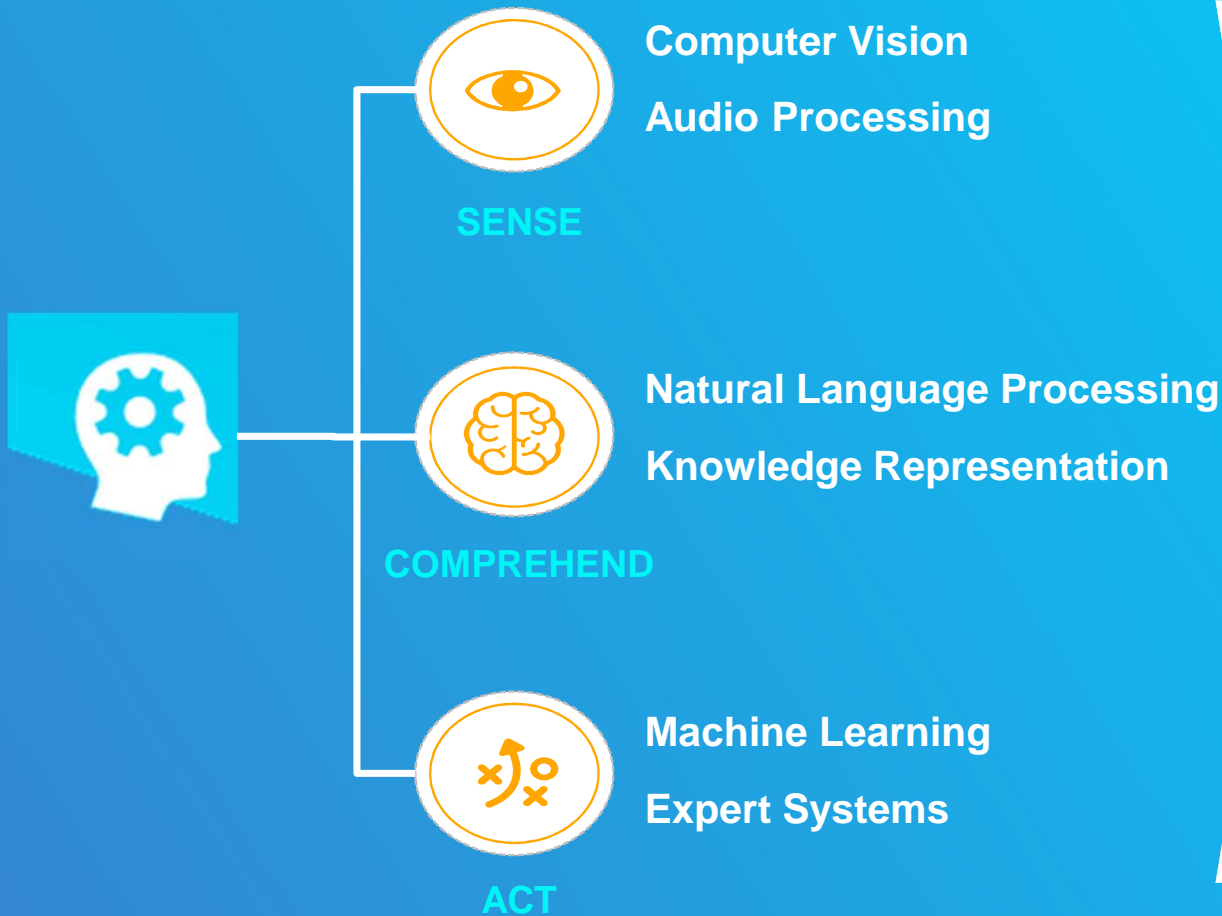
WHY AI CAN MASSIVELY IMPACT PRODUCTIVITY?

**AI CAN REPLICATE LABOR ACTIVITIES AT
MUCH GREATER SCALE AND SPEED, AND
TO EVEN PERFORM SOME TASKS
BEYOND THE CAPABILITIES OF HUMANS.**

AI AS AN ENTIRELY NEW FACTOR OF PRODUCTION



EMERGING AI TECHNOLOGIES



IMPLEMENTING AI CAN BE DONE TODAY...

**CURRENT COMBINATORIAL
TECHNOLOGIES ARE MAKING AI
AFFORDABLE, DOABLE, AND
AVAILABLE**

DEMOCRATIZATION OF AI
SKILLS



DATA TO TRAIN AND
FUEL AI IS MORE
ACCESSIBLE



TODAY



HIGH PERFORMANCE
COMPUTING POWER IS
MORE READILY
AVAILABLE



PROLIFERATION OF AI
PRODUCTS & SOLUTIONS

...AND COULD BECOME THE NEW DRIVER OF ECONOMIC VALUE

**THROUGH THREE CHANNELS
THAT DRIVE INCREASED
PRODUCTIVITY, SATISFACTION,
AND VALUE**



Intelligent automation

*Create a new virtual
workforce*



Labor and capital augmentation

*Complement and enhance
skills and capabilities*



Innovation diffusion

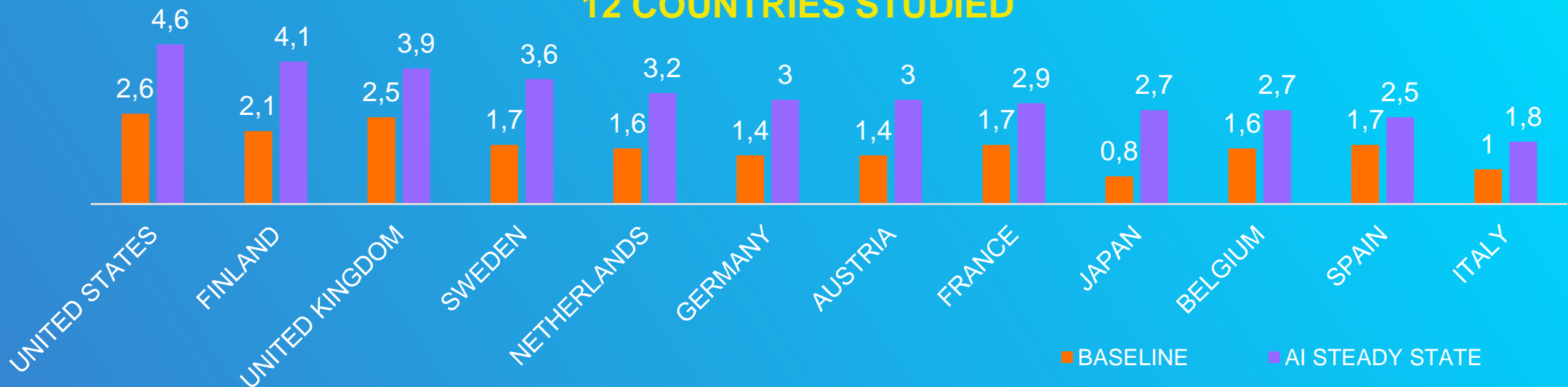
*Drive innovation in
Economy*

AI IS A NEW FACTOR OF PRODUCTION CAPITAL AND LABOR ALONE CANNOT DRIVE SUFFICIENT GROWTH

AI can help:

- Double annual economic growth rates
- Boost labor productivity
- Shorten the timeline to growth

12 COUNTRIES STUDIED



IN ITALY, AI CAN BOOST PRODUCTIVITY OF LABOR OF 12% BY 2035

AI IS EXPECTED TO RAISE ITALY'S GROWTH RATE TO 1.8 PERCENT BY 2035 (NEARLY US\$230 BILLION OR 15 PERCENT OF THE COUNTRY'S CURRENT GVA).

This labor productivity increase dramatically reduces the number of years required for Country economy to double in size



Number of years for the economy to double in size (a full circle represents 100 years)

CASE STUDY

The FANUC logo is displayed in a bold, red, sans-serif font.

FANUC

NVIDIA and FANUC Corporation implemented Artificial Intelligence on the FANUC Intelligent Edge Link and Drive (FIELD) system to increase robotics productivity and bring new capabilities to automated factories worldwide.

The Fanuc Intelligent Edge Link and Drive (FIELD) system is an analytics platform powered by advanced machine learning. It captures and analyzes edge-heavy sensor data, collected from disparate parts of the manufacturing process to improve manufacturing production.

Adding AI to the FIELD system gives robots the ability to teach themselves to do tasks faster and more efficiently. By learning together, what used to take a single robot 8 hours can now be done by eight robots in an hour.

Already FIELD has been deployed in an 18-month “zero downtime” trial at one manufacturer, where it realized significant cost savings

HITACHI

Hitachi has started analyzing information coming not only from manufacturing system, but also from other system which are present in the plant and in other factories, combining them and using them to optimize energy consumption and related cost, coordinate supply chain management, improve quality, ensure business continuity.

EXAMPLE OF APPLICATIONS

1] Sensing technology for recognizing the movements of factory workers and for detecting worker movements that deviate from a predetermined standard range (i.e. abnormal operation) for the purpose of improving product quality.

2] Artificial Intelligence system (H) which takes as input large amount of data coming from Production control systems and is able to correlate specific KPIs with its explanatory parameters, in order to monitor factory operations and spot any possible issue.



GENERAL ELECTRICS

General Electric is using AI to improve service on its highly engineered jet engines.

By combining a form of AI called computer vision (originally developed to categorize movies and TV footage when GE owned NBC Universal) with CAD drawings and data from cameras and infrared detectors, GE has improved its detection of cracks and other problems in airplane engine blades.

The system eliminates errors common to traditional human reviews, such as a dip in detections on Fridays and Mondays, but also relies on human experts to confirm its alerts. The program, then, learns from that feedback.



SAMSUNG

Samsung automated with AI robots the movement of products on its warehouses to improve efficiency.

In their Russian factories, Samsung deployed robotic driverless electric vehicles by RoboCV, enabling warehouse vehicles to move around autonomously, which is expected to streamline 80% of the production process.

By using vision sensors to see the environment around them, the system builds a mathematical model and makes decisions on the preferred route with obstacle avoidance maneuvers.

INDUSTRIAL EQUIPMENT PRODUCER

Use of Advanced Analytics to optimize machine usage and predictive maintenance system introduction

Use of advanced sensors to collect information about machines performances across different Clients' plants.

The data are collected centrally and analyzed in order to identify issues root causes and feed a Predictive Maintenance Asset Optimization algorithm.

This makes possible to alert in advance the Client about possible issues and plan a prompt maintenance.

This solution increased productivity cutting downtime by 35% and also reduced maintenance costs by 30%

THANK YOU

FULL REPORT AVAILABLE AT

<https://www.accenture.com/us-en/insight-artificial-intelligence-future-growth>



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