Digital transformation
How digital is changing the way we think, innovate and produce

Vincent Champain

General Manager

GE Digital Foundry Europe

@vchampain

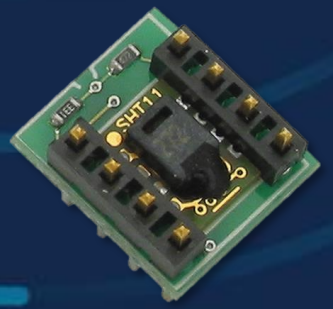
v@champain.net


APOLLO 11

Apollo 11 guidance system

Cheaper Digital technology, everywhere

Sensing

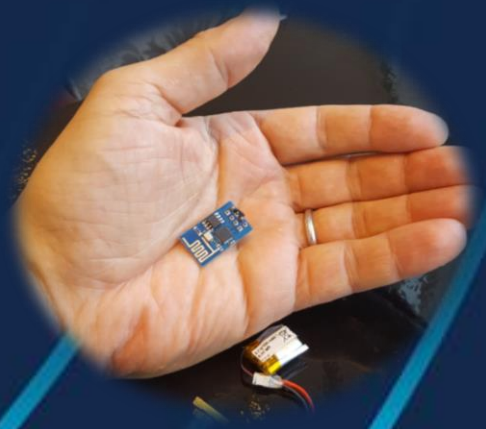


Accelerometer
$0.60

Storing

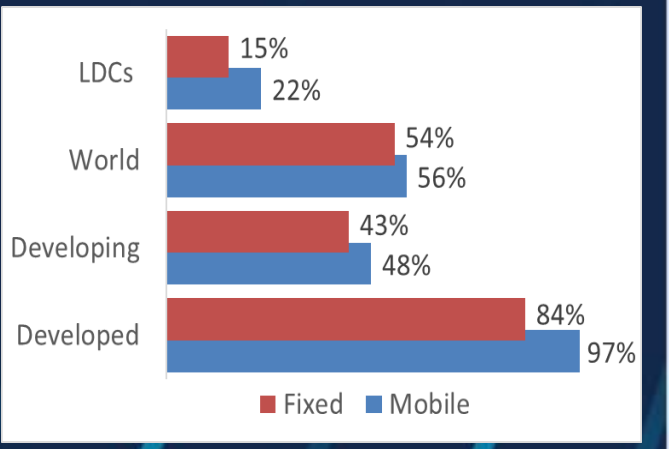
1 GB
< $0.01 / month

Processing & connecting



160 MIPS & Wireless
$2.00

Connecting



Desktop/mobile/internet access

More and more data
Healthcare example

Genome
202, 375,168 KB

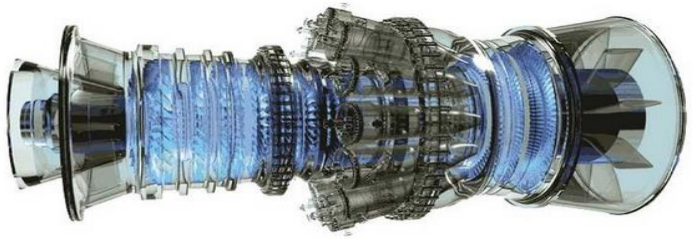
x 40 millions

Simple text
5 KB / record

Simple.

More productivity, everywhere

Asset Performance



0.5% heat rate reduction

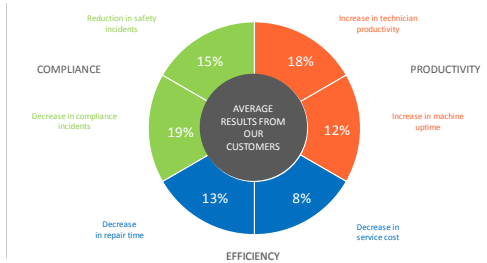
Brilliant Manufacturing

Material waste 12% to 4%
ROI < 12 months

Digital Twin

-50% unplanned events
-4d of outage / year

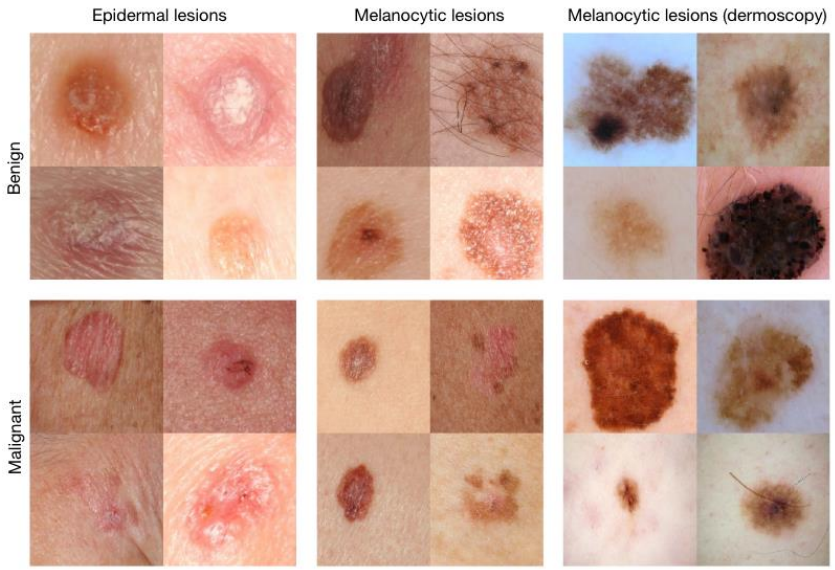
Field Service



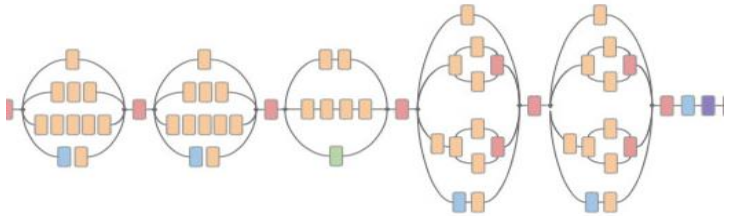
+18 % staff productivity
-8% service cost

IA beats experts but IA+experts beats IA

129,000 images

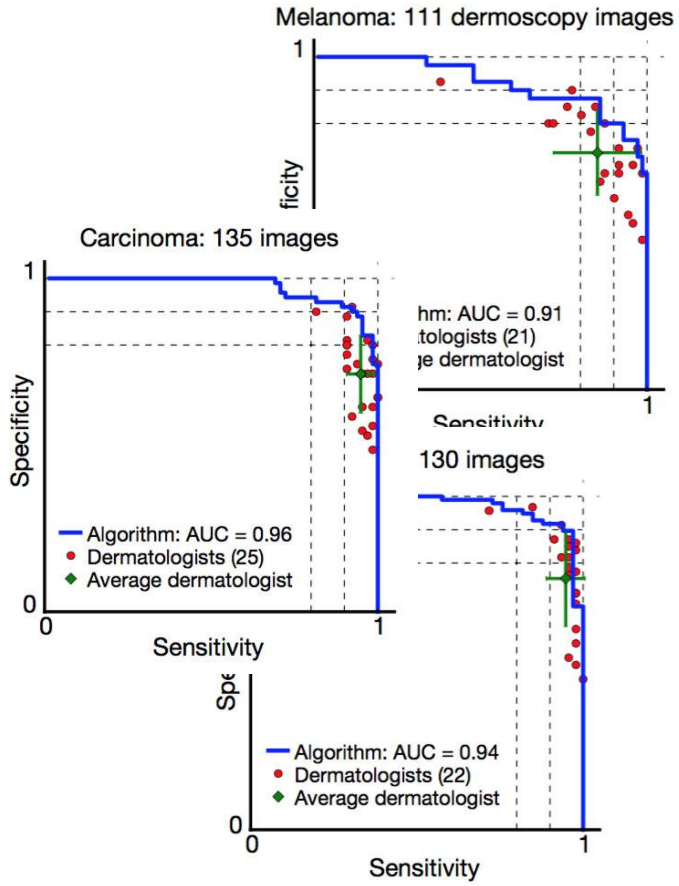


Artificial intelligence

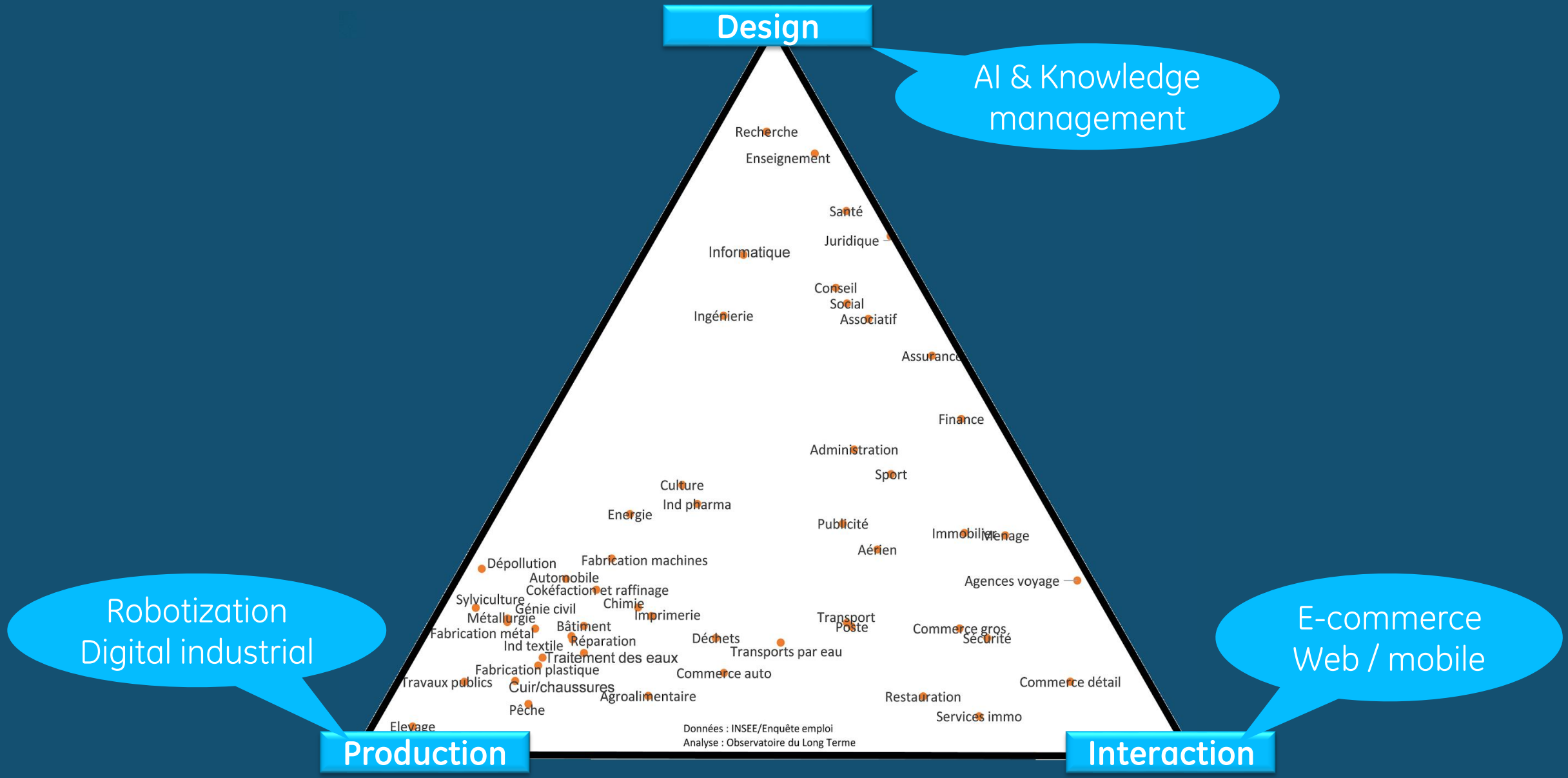


21 specialists

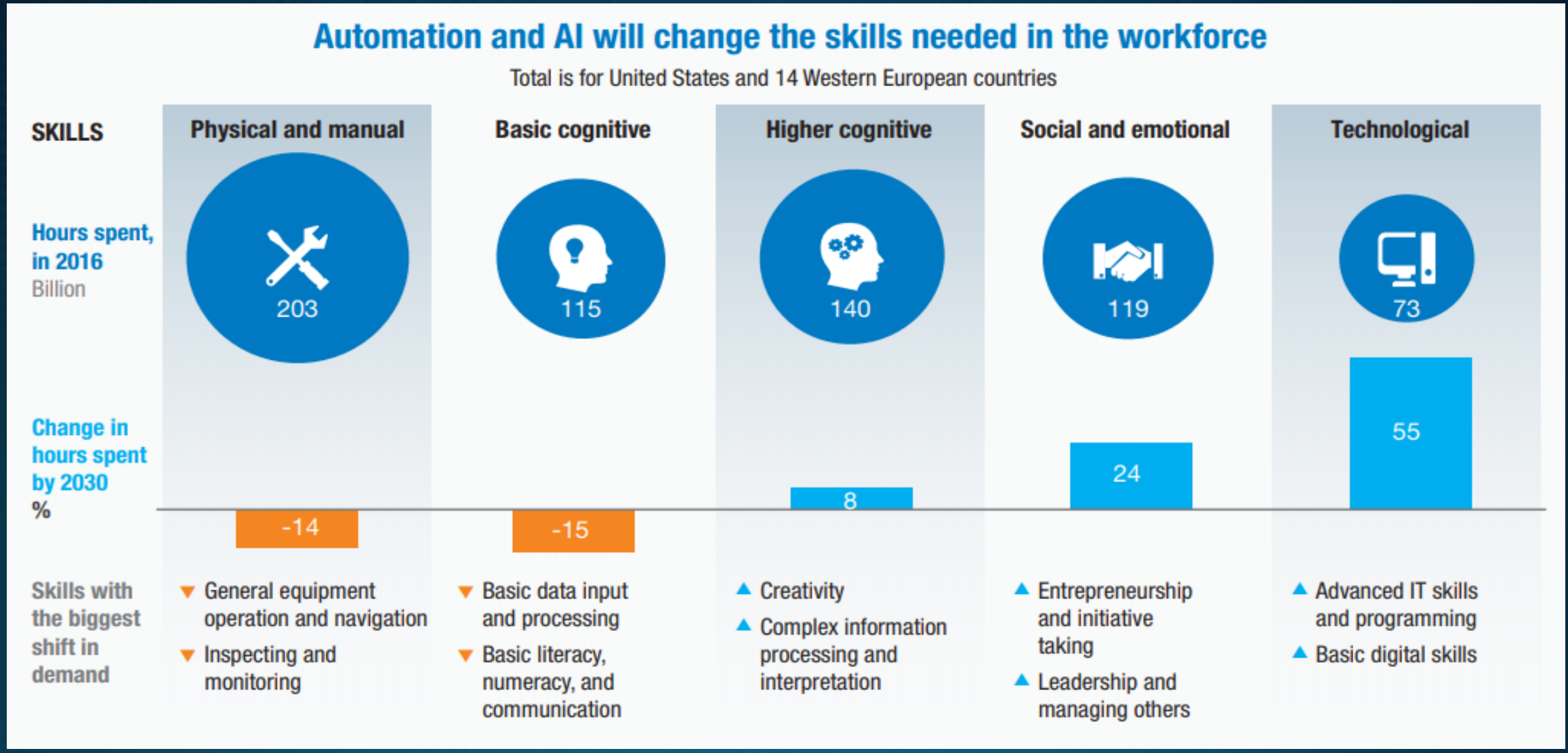
IA beats specialists



Changing how we design, produce, interact



Skills shift



Source: McKinsey, Skill shift: Automation and the future of the workforce, Eric Hazan & alii

Policy implications
1- Maximizing the benefits from digital

Networks / infra / regulation

- Regulation competitiveness: free flow of data, ease to setup a cloud based business, intellectual property, standardize/easy to understand regulations
- Availability of networks: infrastructure investments, cost of access,…

Contents

- Talents: workforce development, technology hubs,…
- Ease to develop contents: partnerships
- Very often a global market: nothing significant is possible behind a close market

Uses

- Focus not just on hard & soft – real value comes from actual utilization
- Monitoring uses in each domain & avoid digital divide

Policy implications
2- Supporting the digital transformation/avoiding digital divide

Statistics & fact based approach

- Rate of self-employment DECREASED in US & OCDE.
- # jobs for drivers INCREASED with the ride sharing / hailing platform
- 1000s of jobs created in the pipeline monitoring activity
- Impact of micropayments & microlending in developping countries

Anticipation & avoiding a lose / lose situation

- Usually more attention to (real or supposed) risks than opportunnities (e: Tensor Flow, Nov 9th 15)
- Different tools to adress different situations (ex: networks in dense areas versus rural)
- Actions (training, local devt, industrial strategy…) take time: need to anticipate potential difficulties & solutions.

Treating the root causes rather than trying to slow down progress

- Productivity or jobs creation / destruction happen for many more reason than digital (innovation, customer tastes evolution, experience curve). Traditional policies (education, training, …) should adress this.
- Digital can also be an excellent solution tool (e-learning, assessment, offer / demand matching…)
- Sometimes regulations create the digital divide by making access to technology more complex / expensive

Thank you !

@vchampain v@champain.net