Sizing the prize
The emerging AI revolution

NVIDIA AI Conference
Pierre A Legrand
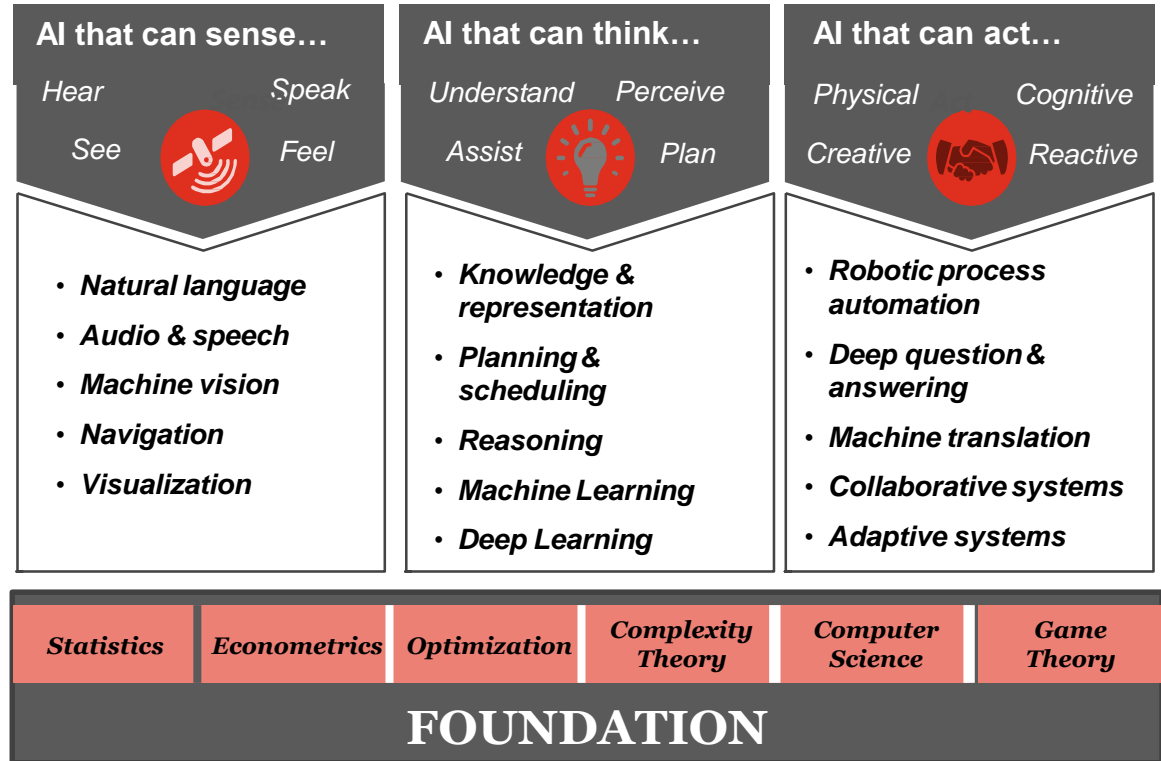October 2017

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What is Artificial Intelligence?

> **"** Artificial Intelligence is defined as the theory and development of computer systems that perform tasks that normally require human intelligence

AI that can sense…

Hear   *Speak*

See   *Feel*

- ***Natural language***
- ***Audio & speech***
- ***Machine vision***
- ***Navigation***
- ***Visualization***

AI that can think…

Understand   *Perceive*

Assist   *Plan*

- ***Knowledge & representation***
- ***Planning & scheduling***
- ***Reasoning***
- ***Machine Learning***
- ***Deep Learning***

AI that can act…

Physical   *Cognitive*

Creative   *Reactive*

- ***Robotic process automation***
- ***Deep question & answering***
- ***Machine translation***
- ***Collaborative systems***
- ***Adaptive systems***

Statistics	*Econometrics*	*Optimization*	*Complexity Theory*	*Computer Science*	*Game Theory*

FOUNDATION

PwC's Data & Analytics

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The AI Revolution is here, and goes beyond automation; huge opportunity exists for both productivity & consumption gains

Global GDP Impact of AI through 2030
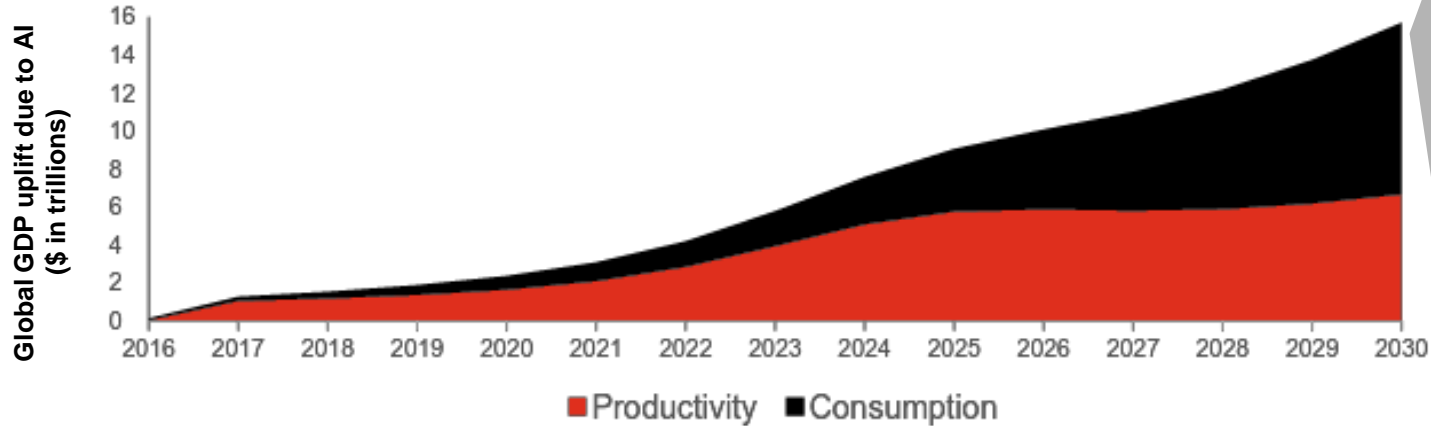
2030 IMPACT: $15.7T

Consumption Contribution:
60%

Productivity Contribution:
40%

Are you ready to exploit the opportunities from AI & overcome the challenges?
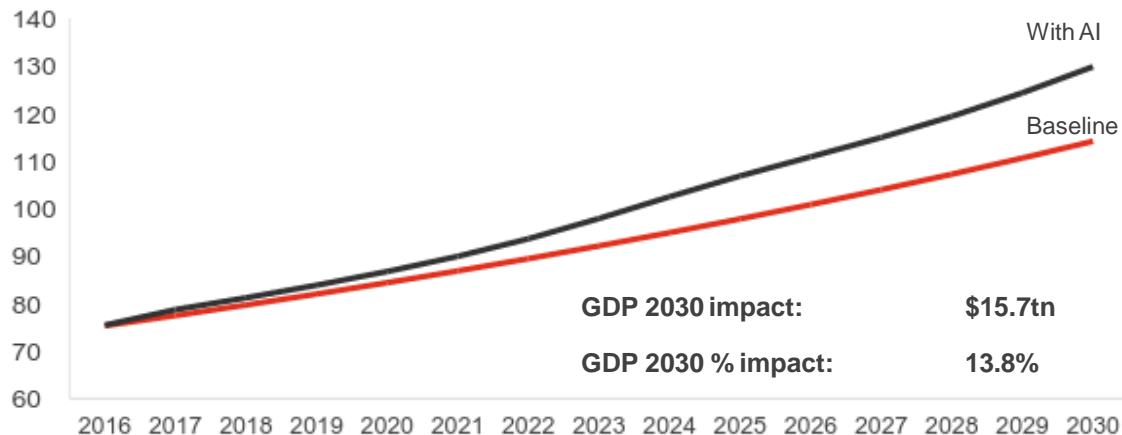
AMARA'S LAW

"

We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run

Global total economic impact of artificial intelligence ($trillion)

With AI

Baseline

GDP 2030 impact: **$15.7tn**

GDP 2030 % impact: **13.8%**

Global GDP will be 14% higher in 2030 as a result of AI, this is equivalent to an additional $15.7 trillion.

As a result, the world economy could grow at 1.0% faster annually on average over the period if businesses take sufficient steps to invest in AI. Note: our analysis focuses on the period to 2030 and we do not conclude that the long-run growth rate of the global economy will fundamentally shift. The assumed baseline rate of technological change is based on average historical trends. It is very difficult to separate out how far AI will help economies to achieve long-term average growth rates vs. simply add to historical average growth rates.

Source: PwC Analysis; based on US results, PwC results ($3.7T impact by 2030) falls within McKinsey Global Institute's A Future that Works range of impact, and slightly less than half of Accenture's Why AI is the Future of Growth estimate of AI GDP impact ($8.3T by 2035),

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Factors contributing to AI growth

Labor productivity, personalization and quality are the primary factors contributing to the AI Growth

Global GVA impact of AI by effect ($ in Billions)
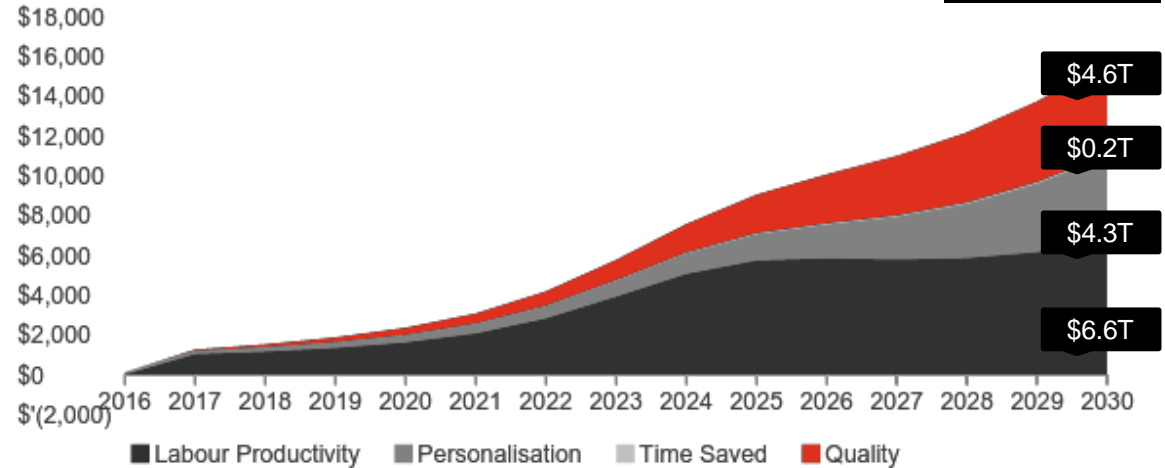
2030 Impact: **$15.7T**

$4.6T
$0.2T
$4.3T
$6.6T

Legend: ■ Labour Productivity ■ Personalisation ■ Time Saved ■ Quality

Source: PwC Analysis; based on US results, PwC results ($3.7T impact by 2030) falls within McKinsey Global Institute's A Future that Works range of impact, and slightly less than half of Accenture's Why AI is the Future of Growth estimate of AI GDP impact ($8.3T by 2035)

Healthcare, Auto, and Financial Services will be especially susceptible to AI disruption
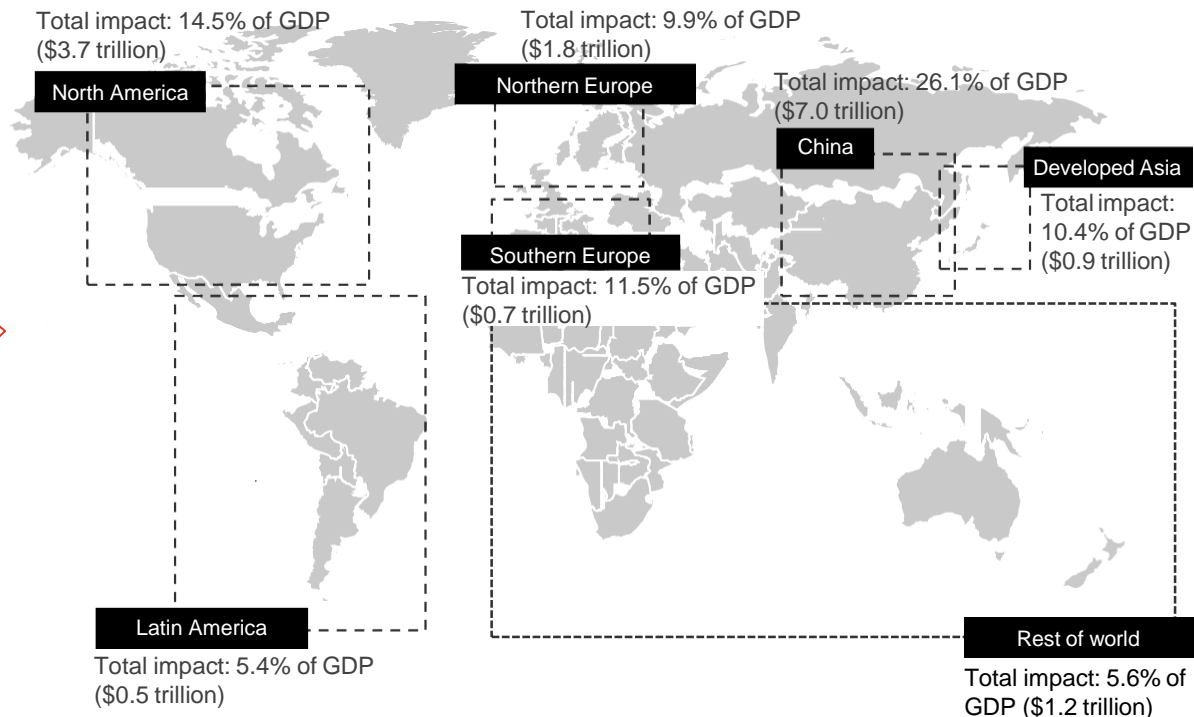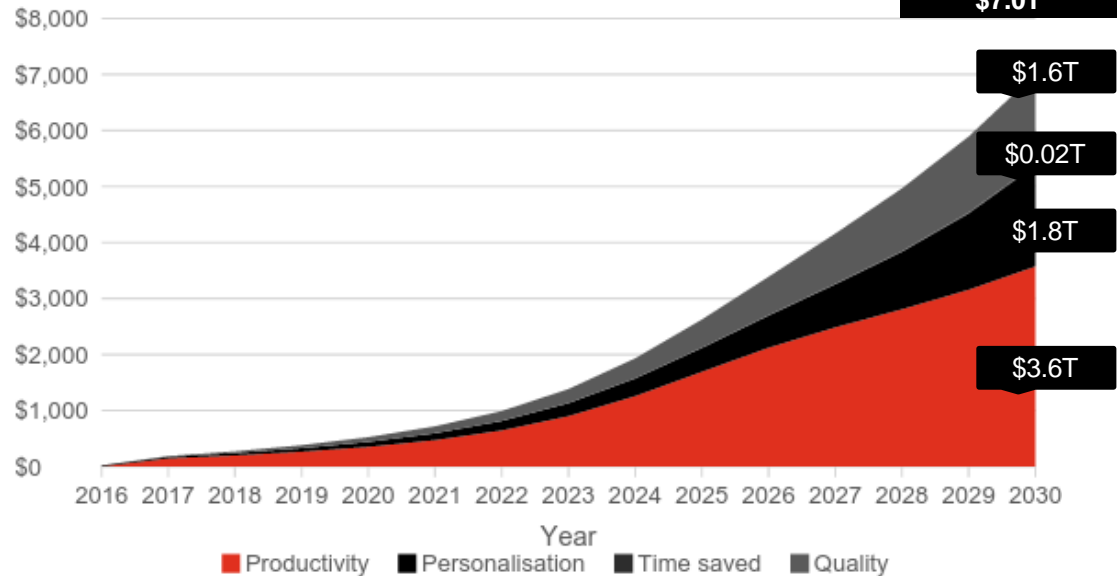
Healthcare, Auto, and FS exhibit huge potential for *high touch, high frequency, and high value* products & services enabled by AI
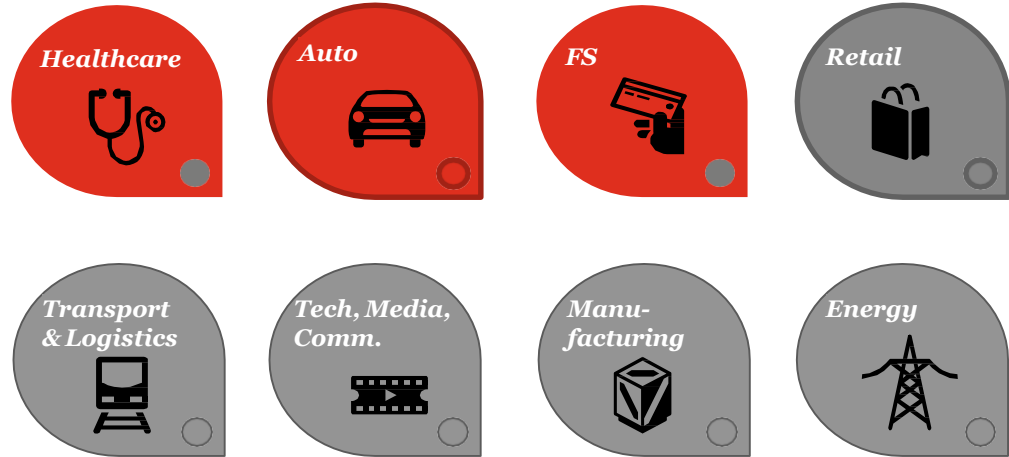
Source: PwC Analysis

Growth by geography

US and China will be big beneficiaries of the impact of AI on GDP

Total impact: 14.5% of GDP ($3.7 trillion)

North America

Total impact: 9.9% of GDP ($1.8 trillion)

Northern Europe

Total impact: 26.1% of GDP ($7.0 trillion)

China

Developed Asia

Total impact: 10.4% of GDP ($0.9 trillion)

Southern Europe

Total impact: 11.5% of GDP ($0.7 trillion)

Latin America

Total impact: 5.4% of GDP ($0.5 trillion)

Rest of world

Total impact: 5.6% of GDP ($1.2 trillion)

Source: PwC Analysis; based on US results, PwC results ($3.7T impact by 2030) falls within McKinsey Global Institute's A Future that Works range of impact, and slightly less than half of Accenture's Why AI is the Future of Growth estimate of AI GDP impact ($8.3T by 2035)

Impacts of AI in China

AI in China will have a much larger impact in China than US, but will start a little bit later

China impact by effect ($ in Billions)

2030 Impact: **$7.0T**

$1.6T

$0.02T

$1.8T

$3.6T

Legend: Productivity | Personalisation | Time saved | Quality

X-axis: Year (2016–2030)
Y-axis: $0 to $8,000

Source: PwC's Computational General Equilibrium Model for AI, 2017

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8

Increase in AI patents from China

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China's progress is remarkable in hot areas like deep learning. It's not like they are only growing in numbers.

SHIGEOKI HIRAI
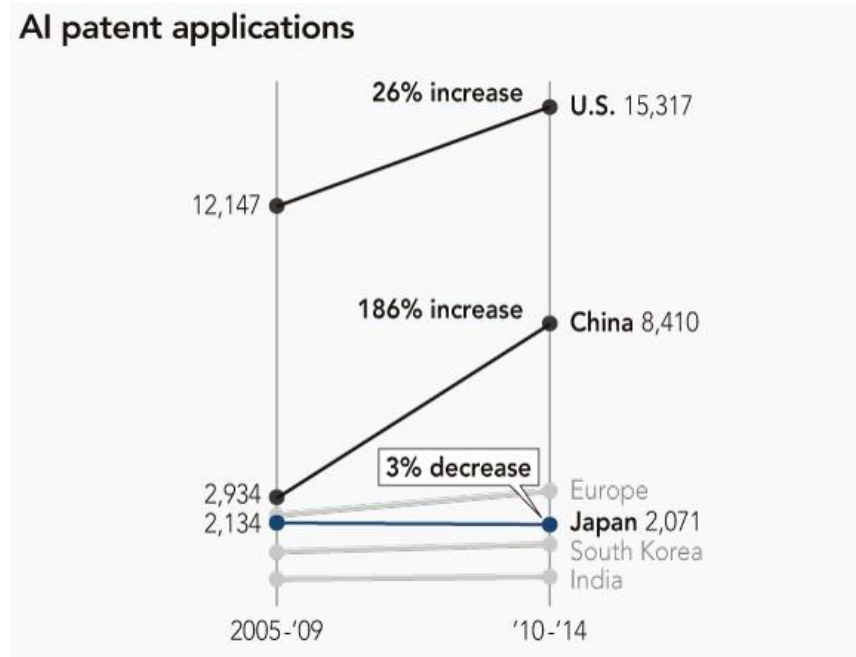
Source: China AI patent submissions shoot up, February 1, 2017, Nikkei Asian Review

Upcoming reports

> **"**
> We need to focus on the economy that's emerging, rather than the one that has been
>
> **COX & ALM,**
> **THE RIGHT STUFF, AMERICA'S MOVE TO MASS CUSTOMIZATION**

- *Detailed Econometric Analysis of 'Sizing the Prize'*

- *Detailed use cases (200+) by sector and value chain*

- *Sector AI Reports (8 Sectors)*

- *Functional AI Reports (6 functional areas)*

- *AI Adoption Model*

- *Forbes AI Leaders Interview Series*
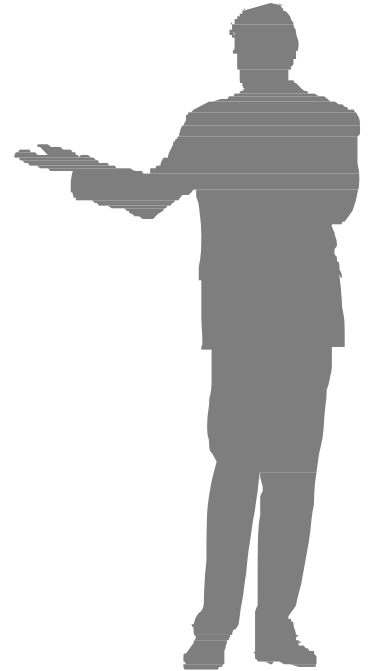
Questions?

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