

MOORE'S LAW

CELEBRATING FIVE DECADES OF INNOVATION & LOOKING TOWARDS THE NEXT 50 YEARS

This month we are celebrating the 50th anniversary of Moore's Law, the cornerstone of technology innovation in the modern world. In 1965, Gordon Moore observed that transistors would decrease in cost at an exponential rate as the number on each silicon chip doubled each year.

ECONOMIC IMPACT OF MOORE'S LAW

Estimated additional value that has been added to Gross Domestic Product (GDP) in the last 20 years, due to the pace of innovation ushered in by Moore's Law:¹

\$3 TRILLION¹



Incremental GDP over the past 20 years of Moore's Law when including the indirect impact.¹

\$11 TRILLION¹

U.S. FUNDING GAP IN RESEARCH, THE ENGINE OF INNOVATION

The U.S. is falling behind in critical capabilities that may define future innovation centers. Observations like Moore's Law may not happen, potentially hobbling economic growth and living standards, because of the funding gap in basic research and lack of STEM education focus.

Decline of U.S. R&D investment in the federal budget from 1968 to 2015

1968
10%



2015
4%



Increase in U.S. funding needed for photonics manufacturing to maintain #1 position and compete with Europe and Japan:²

\$20 MILLION



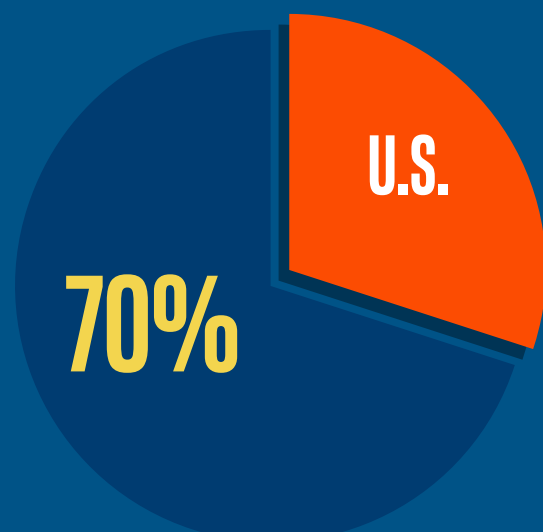
Percent of research requests the U.S. National Institute of Aging can fund:²

6%



U.S. MAY FALL BEHIND AS INNOVATION CENTER OF EXCELLENCE

To enable another 50 years of technological and scientific discovery, the U.S. must cultivate an environment that ensures scientific minds are constantly calculating, observing and inventing to lead to the next innovations.



Percent of research papers published on plant molecular biology now coming from outside the U.S.²

U.S.: \$31.5 MILLION

EUROPEAN UNION: \$3 BILLION

U.S. investment in robotics vs. European Union commitment

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1. Source: IHS- Indirect GDP benefit (USD\$8 trillion in real 2010 dollars). The indirect benefits calculation is based on the contribution of multifactor productivity growth (MFP) to real GDP growth and was derived from the OECD's productivity database and IHS' GDP data.

2. The Future Postponed: Why Declining Investment in Basic Research Threatens a U.S. Innovation Deficit, MIT, April 27, 2015.
http://dc.mit.edu/sites/default/files/innovation_deficit/Future%20Postponed.pdf