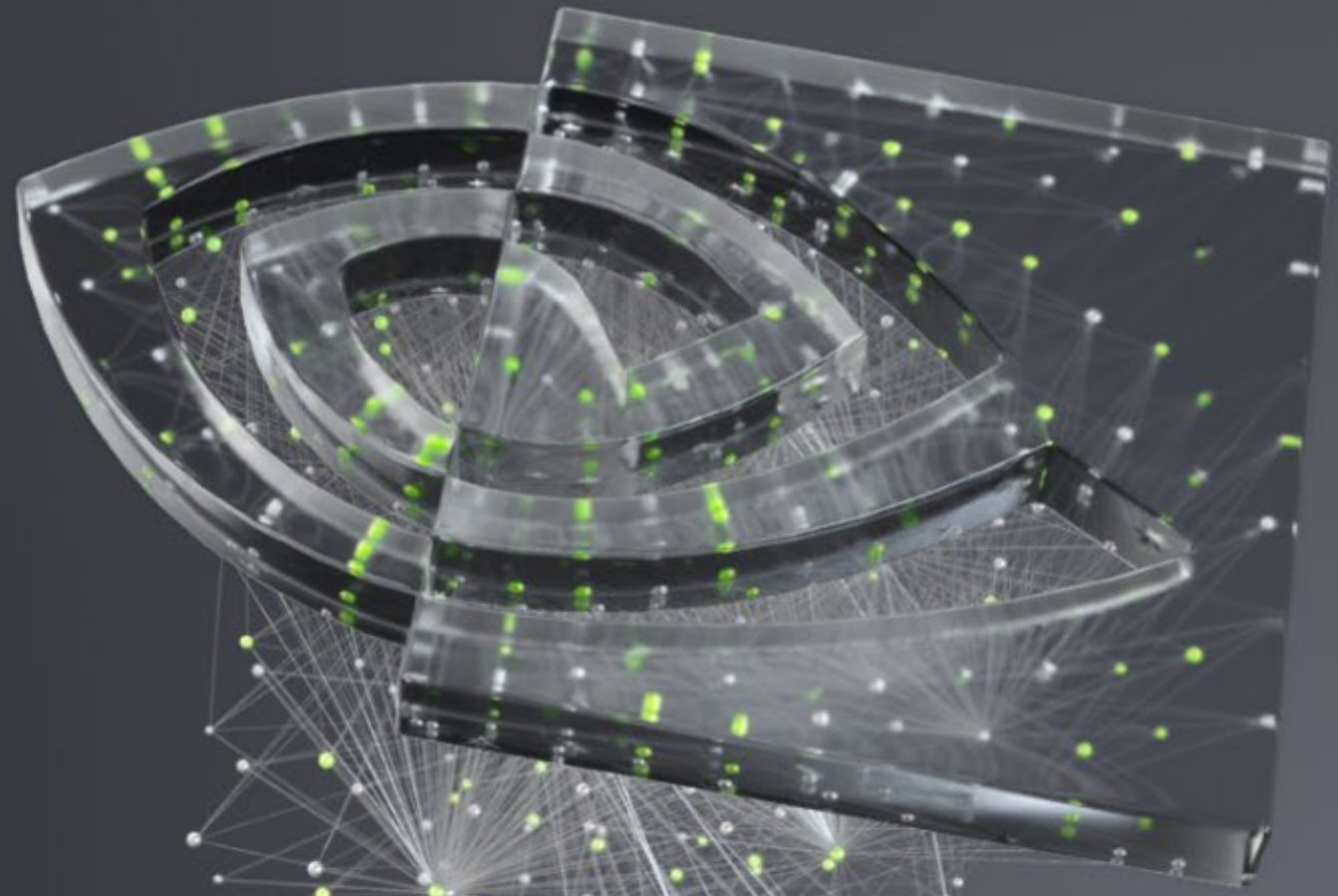
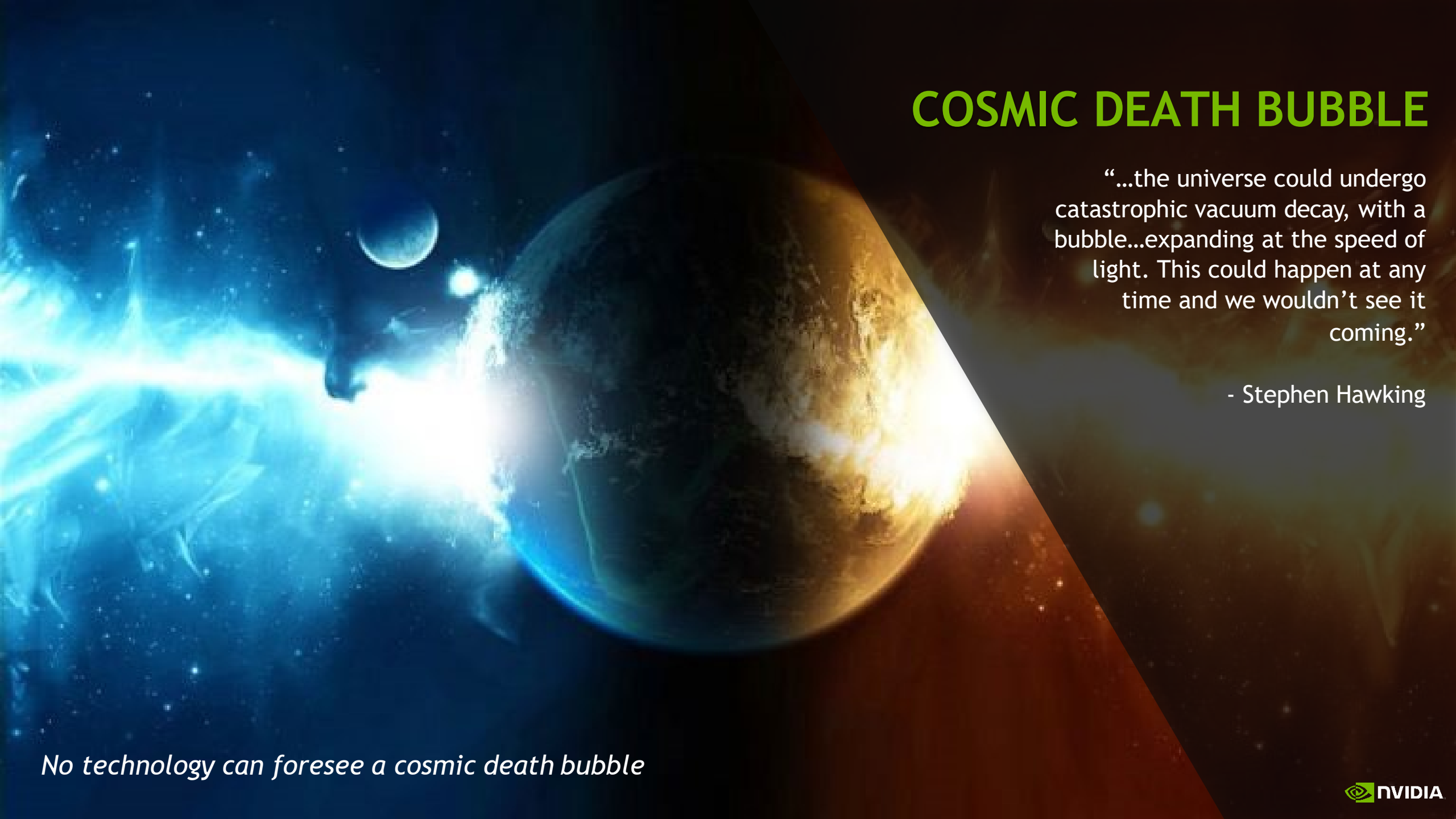


LEVELING THE PLAYING FIELD

How NVIDIA is Democratizing AI Infrastructure



COSMIC DEATH BUBBLE

"…the universe could undergo catastrophic vacuum decay, with a bubble…expanding at the speed of light. This could happen at any time and we wouldn't see it coming."

- Stephen Hawking

No technology can foresee a cosmic death bubble

NVIDIA

SEEING THE FUTURE

NVIDIA worked closely with NASA and the Frontier Development Lab to create this first-time rendering of the irradiance field around Faustini crater, near the Moon's south pole, which is helping to plan a permanent base on the moon.

But technology increasingly enables us to shape the future

“GAMECHANGER”

DIGITAL FOUNDRY

“Performance matters because games are built on great performance.”

Jensen Huang

GeForce 256, released 2000, considered the world’s first consumer GPU

NVIDIA

SOLVING PROBLEMS ORDINARY COMPUTERS CANNOT SOLVE

"NVIDIA POWERS 333 OUT OF THE TOP500 SYSTEMS IN THE WORLD"

HPCWIRE

BIG SCIENCE NEEDS SUPERCOMPUTERS

MODELING THE UNIVERSE, PREDICTING CLIMATE CHANGE, VACCINE DEVELOPMENT

ROADRUNNER - 2007

World's First 1 Petaflop (1 QUADRILLION) Supercomputer

PLANNED IN 2002
OBSOLETE BY 2013

296 SERVER CABINETS

$120,000,000 to build,

NVIDIA

TITAN - 2012

Titan is 17x the performance of Roadrunner for less money

OPERATIONAL IN 2012

200 SERVER CABINETS

$97M to build

NVIDIA

SUMMIT - 2018

1st supercomputer designed as an AI Supercomputer

- **200** PETAFLOPS
- **$200,000,000** COST
- **8-10x FASTER** THAN TITAN

NVIDIA

SELENE - 2020

DGX AI Supercomputer

- **7th** fastest computer in the world
- **2nd** most sustainable computer in the world
- **FASTEST** Industrial AI Supercomputer in US
- **1 EXAFLOP** = 1000 PETAFLOPs
- **3 WEEKS** to build

DISTRIBUTION OF AI INFRASTRUCTURE
FROM THE CLOUD TO THE EDGE

FIBER

5G

CLOUD

Public CSP, Private/Telco or Sovereign-run Clouds

ON-PREM

Enterprise, Co-location or State-owned Data Centers

EDGE

Mobile Devices, Machines, Spaces, Sensors

Cloud Computing ⟷ Data Center Computing ⟷ Edge Computing

Postmates

AUTONOMOUS ON-DEMAND
URBAN DELIVERY ROBOT

NVIDIA


NVIDIA

TRAINING ROBOTS TO BE ROBOTS

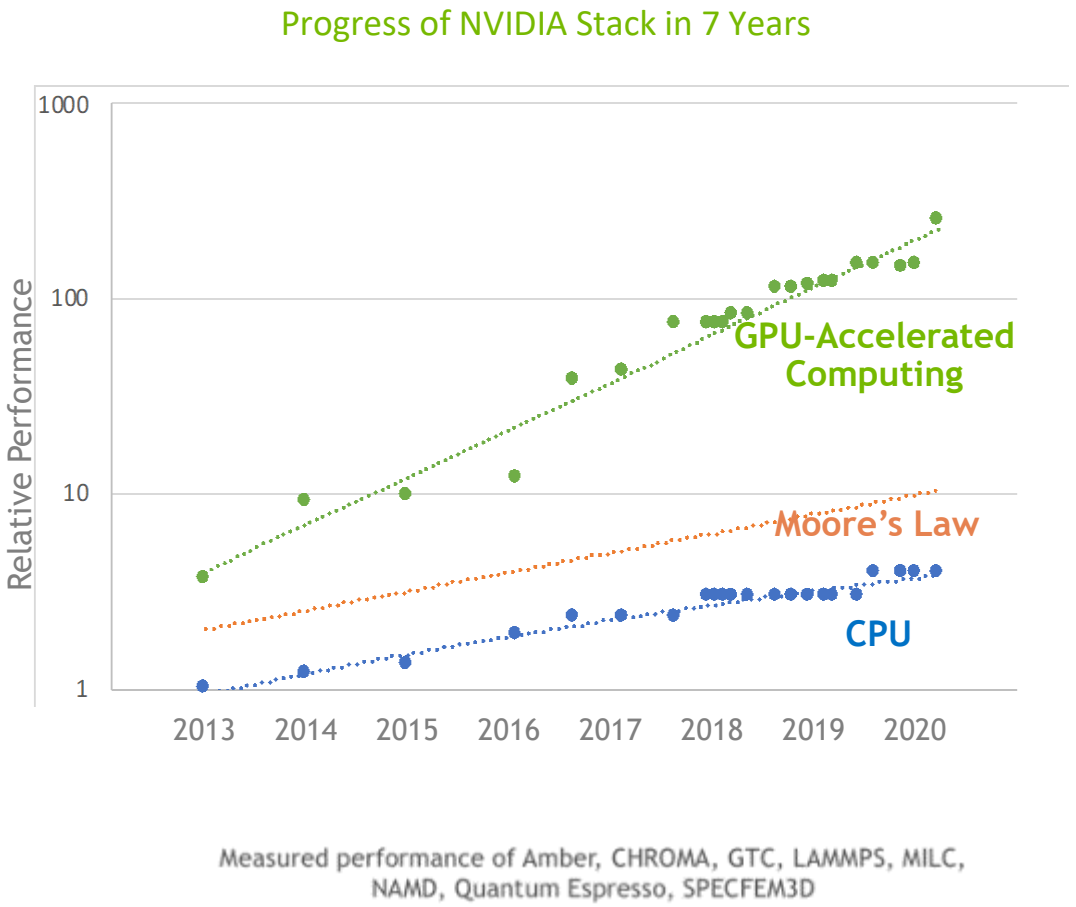
NVIDIA

Huang's Law

"…SILICON CHIPS THAT POWER ARTIFICIAL INTELLIGENCE WILL MORE THAN DOUBLE IN PERFORMANCE EVERY TWO YEARS… ATTRIBUTED TO BOTH HARDWARE AND SOFTWARE."

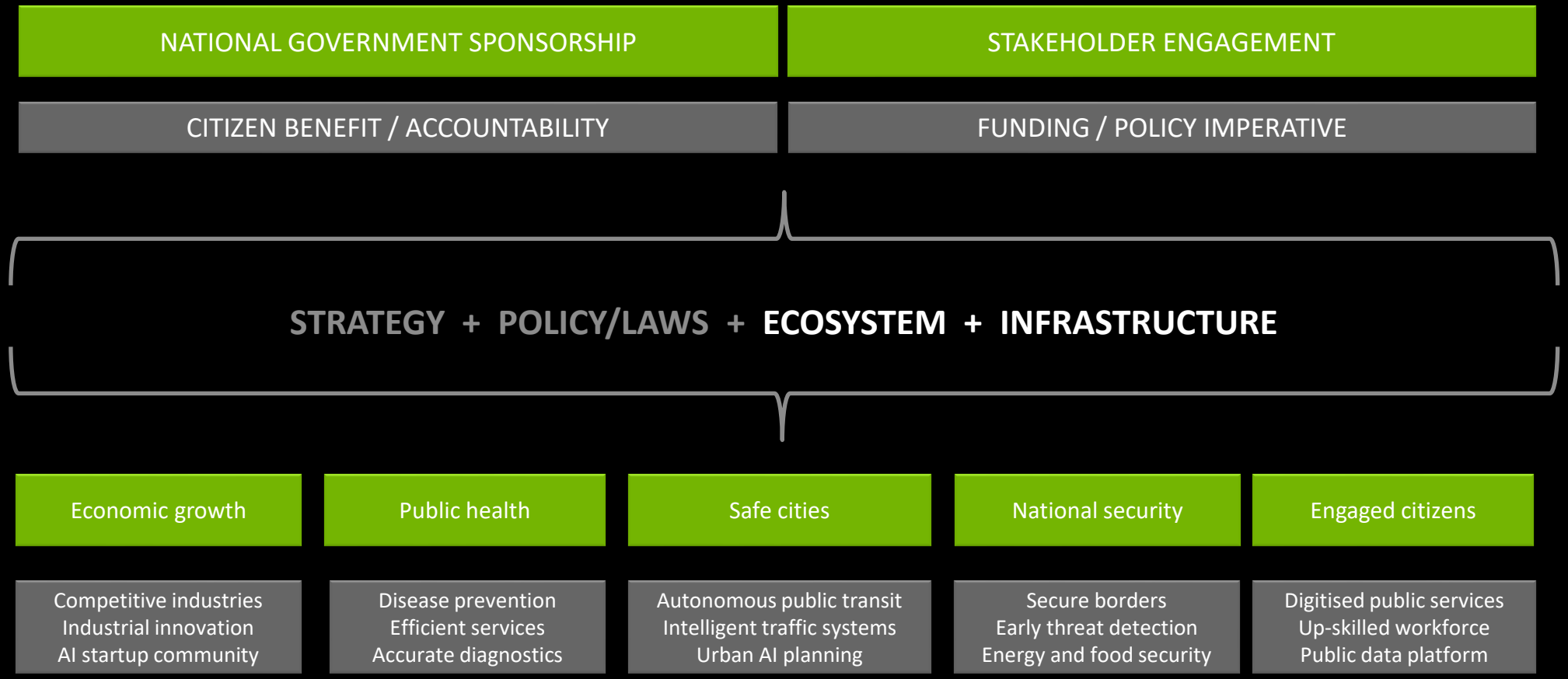
- Christopher Mims, Wall Street Journal, Sept 19, 2020

BEYOND MOORE'S LAW

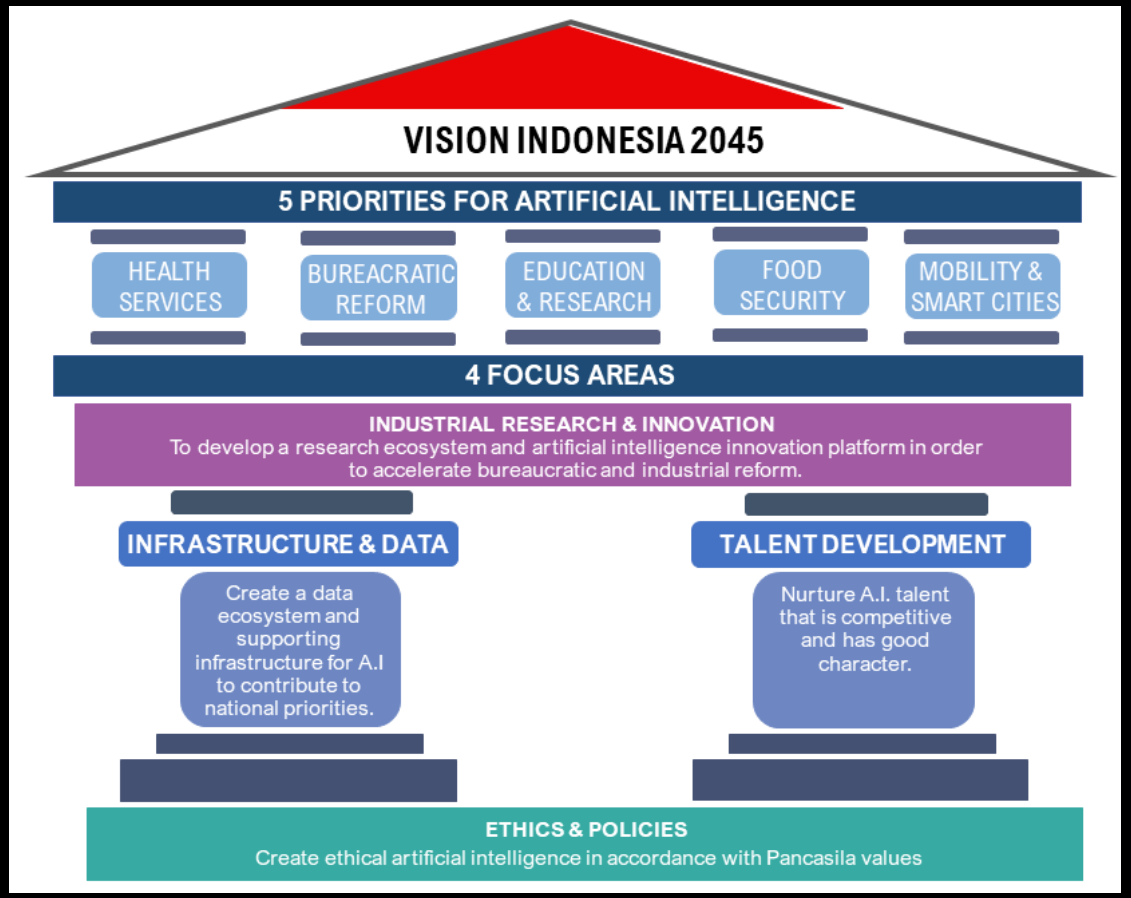


FULL STACK INNOVATION

GLOBAL AI POLICY IMPERATIVE



STRATEGI NASIONAL KECERDASAN ARTIFISIAL INDONESIA



Source: www.carringtonmalin.com

AI INFRASTRUCTURE IS THE NEW AXIS FOR GLOBAL COMPETITION

- ENGINE FOR DISCOVERY
  - TIME MACHINE FOR SCIENTISTS
  - BRINGS PRESTIGE/FUNDING
  - FOSTERS INT'L COLLABORATION
- ENGINE FOR ECONOMIC GROWTH
  - INDUSTRIAL INNOVATION
  - SERVICE INNOVATION
  - CUSTOMER EXPERIENCE INNOVATION
- PLATFORM FOR PUBLIC INNOVATION
  - MORE ACCESSIBLE GOV'T
  - INFECTIOUS DISEASE DETECTION
  - URBAN PLANNING

NVIDIA

Distribution of supercomputers in the TOP500 list by country (June 2020)[29]

Country or Territory	Systems
China	226
United States	114
Japan	29
France	19
Germany	16
Netherlands	15
Ireland	14
Canada	12
United Kingdom	10
Italy	7
Singapore	4
Brazil	4
Korea, South	3
Saudi Arabia	3
Norway	3
Australia	2
Russia	2
United Arab Emirates	2
Taiwan	2
Switzerland	2
Sweden	2
India	2
Finland	2
Spain	1
Czechia	1
Hong Kong (China)	1
Poland	1
Austria	1

TOP500
The List.

Global AI Divide

Only 28 countries have a

Top500 AI supercomputer.

NVIDIA

DEMOCRATIZED **AI INFRASTRUCTURE** CHANGES THE ARC OF ECONOMIC GROWTH

2007: 1 petaflop = $100,000,000

2020: 5 petaflops = $200,000

ENABLING ALL NATIONS TO BECOME AI NATIONS

India's C-DAC commissions largest AI supercomputer from NVIDIA and ATOS

Sweden's WASP to build largest AI supercomputer at Linköping University by NVIDIA

Italy to build LEONARDO, world's fastest AI supercomputer with 14,000 NVIDIA GPUs

UK's largest AI supercomputer in Cambridge to be build by NVIDIA for life science R&D

US largest academic AI supercomputer at Univ of Florida by NVIDIA

Czech Republic's largest AI supercomputer by NVIDIA & HPE at Technical Univ Ostrava

Vietnam's VinAI deploys first DGX A100 to support 60 research scientists, residents and engineers

Thailand's CMKL University procures 6 DGX A100s to advance National AI Program sponsored by MEHESI

UAE Ministry of AI to build 30 petaflop AI cluster with NVIDIA DGX to advance national AI agenda

Luxembourg to build 500 petaflop AI supercomputer, MeluXina, in partnership with ATOS and NVIDIA

Egypt to launch first national AI super-computer powered by Dell and NVIDIA GPUs

Slovenia to launch Vega, their largest AI supercomputer with 240 NVIDIA Ampere GPUs in partnership with ATOS

NVIDIA


IMAGINE THE POSSIBILITIES
THANK YOU.