

## China and US engage in asymmetric competition for digital supremacy

- The US and China see radically divergent strategies for digital transformation across business, government and society – latest research from the IMD World Competitiveness Center reveals
- The US tops the global rankings for digital competitiveness 4 years running, while China has surged 15 places in that time
- By regional competitiveness, Eastern Asia has outstripped North America and Western Europe with investment in science education, research, robotics, and high-tech exports

29 September 2021: New research published today by the World Competitiveness Center of [the Institute for Management Development](#) (IMD) reveals a divergence in the digital transformation of the world's major economies, with long-term implications for global economic dominance and national welfare.

According to the Center, the world's two largest economies are evenly matched on a few measures of digital competitiveness covering knowledge transfer, business readiness and educational investment. Both are data importers, where the rest of the world exports. But they are otherwise pursuing starkly differing digital transformations.

The US tops IMD's [Digital Competitiveness Rankings](#) for the fourth year running, alongside a rapid rise through the ranks from Japan, South Korea and Taiwan. China has risen 15 places in that time in a state-based governance model.

US success has leaned to date on highly responsive consumer attitudes, the domestic prevalence of technology, and business confidence in accessible venture capital. By contrast, China has benefitted from expanded levels of scientific and educational attainment, highly productive R&D and a leading global share of high-tech exports.

The research shows that the US outspends China on education as a proportion of GDP at almost double the rate (6% against China's 3.5%), although China tops global rankings for mathematical literacy among the young (the US ranks 36<sup>th</sup>)<sup>i</sup>.

The two countries spend similarly on R&D as a percentage of GDP (2-3%), and they even grant comparable percentages of high-tech patents; but China's scientific research is more productive, correlating to almost twice as much R&D investment as US research.

The IMD World Competitiveness Center report indicates that the US has high levels of 'adaptive attitudes' among households and consumers. Its population is the world's biggest per-capita retail spender on the internet, has a third more internet users per capita than China and has the world's highest levels of tablet ownership. It also has among the world's highest levels of democratic interaction with government online (so-called e-participation).

By comparison, China leads the world on its proportion of scientific and technical employees, who represent 11% of the country's total employment, almost double that of the US (6%). It is the country with the most robots in education and R&D; while it has almost a third (30%) of all the world's robots, twice that of its nearest rival Japan (14%). Its high-tech exports run at 31% of all manufactured exports, as against the US's 19%.

**Arturo Bris, Director of IMD's World Competitiveness Center said:** "Our societies' digital transformation have profound implications for national prosperity and expanding welfare, but the choices and trade-offs in play are often poorly understood by those affected.

"The success of rapidly divergent digital strategies rests heavily on public trust in the societal and institutional leaders driving them, and this research is part of our effort to help build a broader understanding and a better-quality public debate."

The digital rankings are part of the IMD World Competitiveness Center's 30-year research project to measure and track the relative economic competitiveness of more than 60 leading economies across 300 plus measures. The project maps out new digital fronts on which global competition will play out.

Regionally, South America is shown to be lagging. Among other things, Argentina suffers from relatively poor perceptions that banking and financial services adequately support business, and that venture capital is readily available. Colombia is hampered by relatively low levels of mobile broadband subscribers, Peru by a relatively weak wireless broadband penetration rate (per capita).

In other regions, the Middle East saw its biggest rise in the ranks from the United Arab Emirates, which entered the global top 10. It has the world's largest net inflow of tertiary-level international students (per capita), and tops business perceptions that its immigration laws are not a barrier to foreign labour.

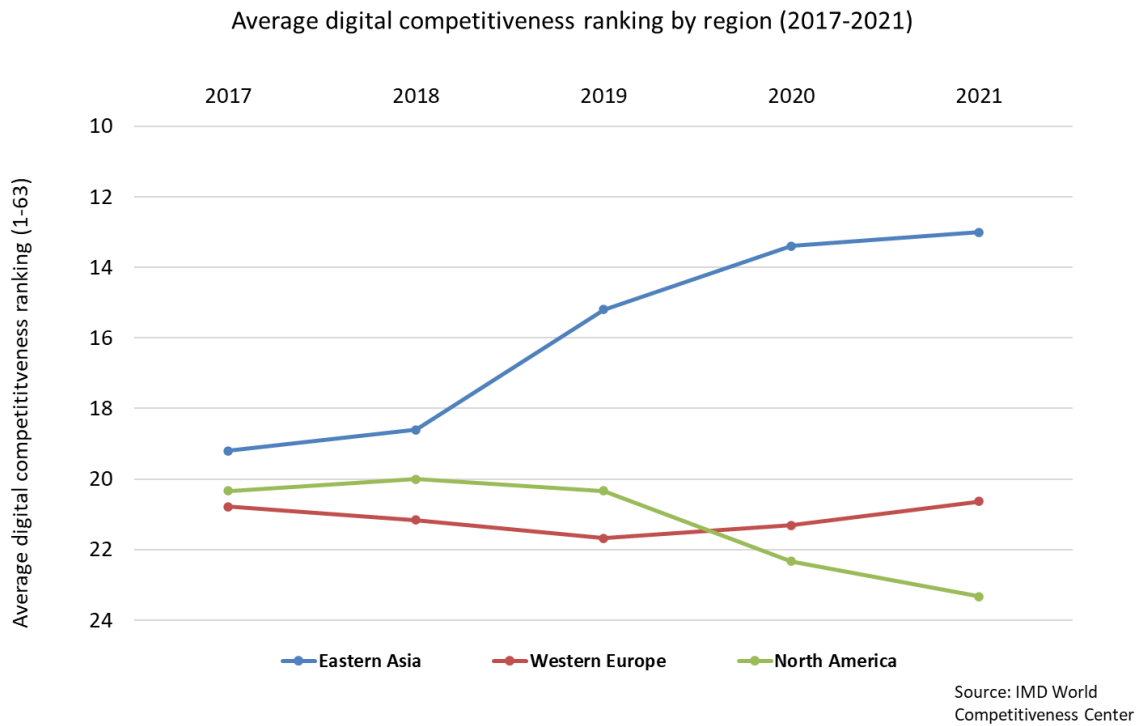
The Center's research ranks Hong Kong SAR second in the global pecking order for digital competitiveness. The economy leads the world in graduates in sciences. It exports more high-tech goods than any country as a proportion of all its manufactured exports. And it tops business perceptions as a host to companies able to respond quickly to threats and opportunities.

Sweden's third place in the rankings has been achieved in large part by the country's strong knowledge economy and talent development, and by global business perceptions that it hosts readily accessible digital and technological skills, according to the IMD Competitiveness Center.

Switzerland maintains its position at 6<sup>th</sup>. It tops global business perceptions that it attracts highly skilled foreign talent, hosts internationally experienced managers, and that it enforces intellectual property rights. Among other things, it ranks among only eight countries in the world to achieve full scores on IMD's bespoke credit rating index, which combines ratings and outlooks from Fitch, Moody's and S&P.

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**Chart 1 – Digital competitive rise of Eastern Asia**



Regions defined as:

**Eastern Asia** – China, Hong Kong SAR, Japan, Korea Rep., Taiwan China

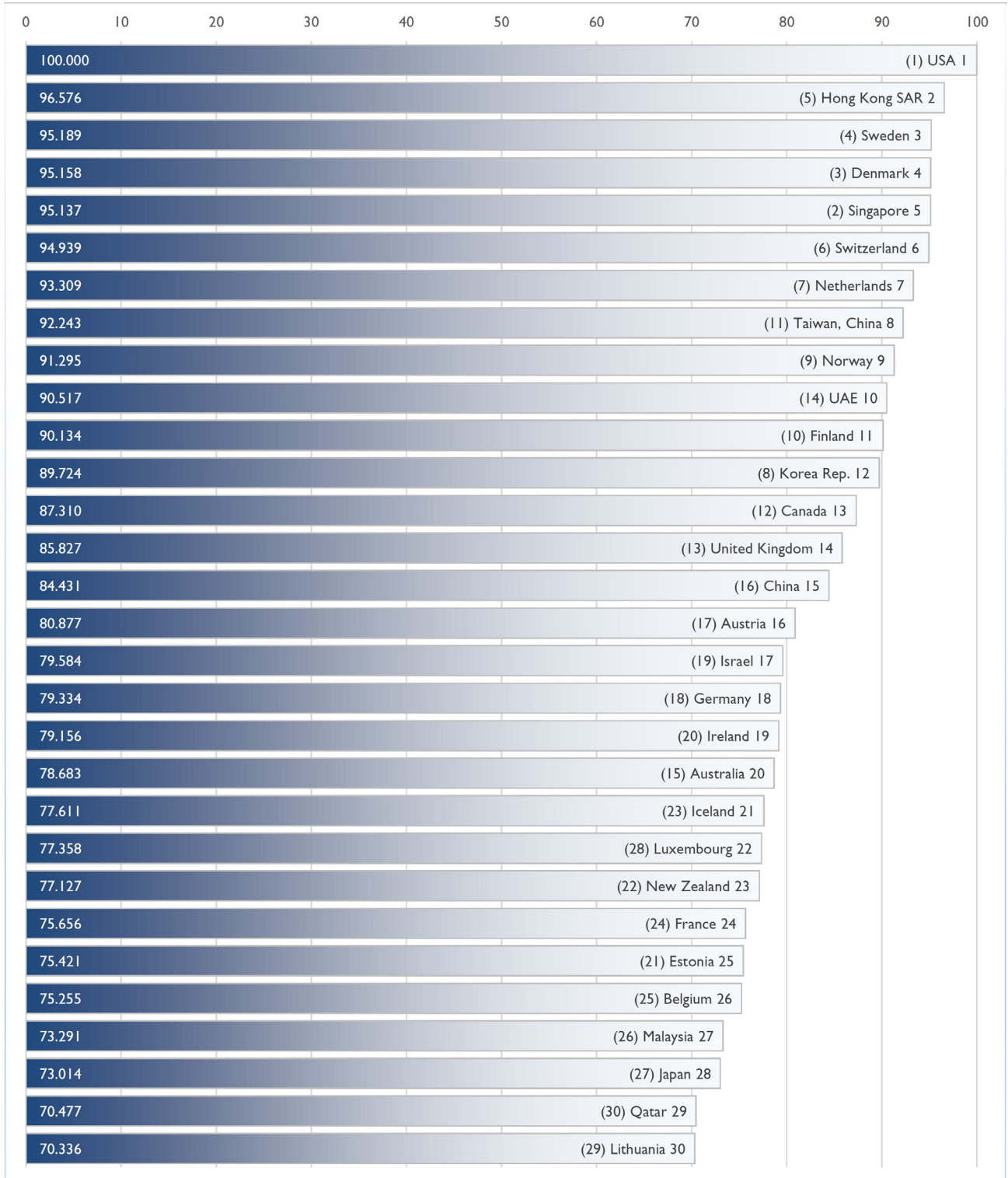
**North America** – Canada, Mexico, USA

**Western Europe** – Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom

## Chart 2 – Top 30 countries in digital rankings (of 64)

Full rankings list (1-64) can be found the attached report.

### DIGITAL COMPETITIVENESS RANKING (Ranks 1 - 30)



## Notes to Editors

### About the research

The IMD World Digital Competitiveness Ranking studies 64 economies, assessing the capacity of a country to adopt and explore digital technologies leading to transformation in business models, government practices and society in general. The ranking is composed by three factors, namely:

Knowledge – the intangible infrastructure, which underlines the process of digital transformation through the discovery, understanding and learning of new technologies.

Technology – the overall context in which the development of digital technologies is enabled. This includes criteria which track how well regulation facilitates innovation in the private sector, the availability of capital and the quality of technological infrastructure.

Future Readiness – the degree of technology adoption by government, business, and society in general. Examples of indicators include the diffusion of internet retailing (e-commerce), of industrial robots and of data analytics tools in the private sector.

- **The digital rankings report can be found [HERE](#)**
- **The digital rankings methodology can be found [HERE](#)**
- **Countries' digital rankings profiles can be found [HERE](#)**

### About the IMD World Competitiveness Center

For more than 30 years, the IMD World Competitiveness Center has pioneered research on how countries and companies compete to lay the foundations for sustainable value creation.

The competitiveness of nations is probably one of the most significant developments in modern management and IMD is committed to leading the field. The [IMD World Competitiveness Center](#) conducts its mission in cooperation with a network of 58 Partner Institutes worldwide to provide the government, business, and academic communities with a range of special and prognostic reports and services on key aspects of competitiveness.

### About IMD

Founded by business executives for business executives, [the Institute for Management Development \(IMD\)](#) is an independent academic institution with Swiss roots and global reach. Since its creation 75 years ago, IMD has helped drive the development of leaders who can in turn transform organizations and contribute positively to society.

Based in Lausanne (Switzerland) and Singapore, IMD has been ranked in the Top 3 of the annual FT's Executive Education Global Ranking for the last nine consecutive years and in the top five for 17 consecutive years. Our MBA and EMBA programs have repeatedly been singled out among the best in Europe and the world. Led by an expert and diverse faculty, we strive to be the trusted learning partner of choice for ambitious individuals and organizations worldwide.

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<sup>i</sup> As measured by the OECD's Programme for International Student Assessment (PISA)