

## The World's Most Innovative Countries, 2015



By Bruno Lanvin , Executive Director for Global Indices at INSEAD and co-author of the Global Innovation Index report

**Innovation-led growth is no longer the prerogative of high-income countries alone. Middle-income countries are catching up fast, but they still need some crucial ingredients to compete.**

There is a common misconception about the success of Silicon Valley; that its success is largely down to the disruptive and rebellious innovators who have made it their playground. A hive of innovative activity it may be, but the truth is that the young and ambitious have congregated around the valley because it is home to universities, research labs, venture capital firms and armies of risk-taking talent, which came because of smart government policies.

Countries around the world are trying to emulate Silicon Valley's success by trying to construct similar frameworks in the hope of building the next

Google. There are three key policy elements that can mean the difference between success and failure. First, policies matter. From tax incentives to regulations and from grants to funding, the role of policies is crucial. During the Cold War, the US Defence Department threw massive amounts of funding at semiconductor firms creating ever-faster integrated circuits and computing capacity, which give Silicon Valley its name. It was computer research at the Defense Advanced Research Projects Agency (DARPA) that led to the creation of computer networking that later became the internet. Its nearby universities also received federal funding for networking hardware that was later commercialised as Cisco. Working at the National Science Foundation's Digital Library Initiative, Sergey Brin created the algorithm that later became Google.

Secondly, as Jean Monnet, one of the founders of the European Union famously said, "nothing starts without people, nothing lasts without institutions." Innovators need political stability, streamlined tax structures, inter-agency cooperation, supportive research institutions and fluid links between public researchers and private companies.

Thirdly, risks need to be made attractive. Entrepreneurs and innovators need clear legal frameworks, clear fiscal frameworks and clear business frameworks to mitigate risk and investment confidently. These three qualities have made the United States the 5<sup>th</sup> most innovative country in the world according to this year's [Global Innovation Index](#).

## **Innovation achievers**

Similar characteristics defined the top 10 in the GII, with Switzerland leading the pack for the 5<sup>th</sup> year in a row. The Swiss recipe stands out for its historical engineering culture, its strong emphasis on education, especially of the vocational sort, and its open mindset where talent comes and goes freely.

### **2015 TOP 10**

1. Switzerland
2. United Kingdom
3. Sweden
4. Netherlands

5. United States
6. Finland
7. Singapore
8. Ireland
9. Luxembourg
10. Denmark

While the top 10 are to be celebrated, this year's report takes specific steps to understand how policy is being leveraged by what we call the "innovation achievers", economies that perform at least 10 percent better than their peers in the same income group. While high-income countries dominate the index and maintain their positions, noticeable ranking moves are happening more frequently within lower-income groups.

Among such achievers are China, Malaysia, Vietnam, India, Morocco and Jordan. They are all making improvements to institutional frameworks, the skills of the labour force with expanded tertiary education, better infrastructure and a deeper integration with global credit investment and trade markets.

Malaysia for example, has outperformed its middle income peers in all seven pillars of the GII over the last three years, due to institutional stimulation of innovation, an improving business environment and the government's increasing focus on research funding, which has increased its R&D expenditure as a percentage of GDP and the number of workers in R&D fields. The Ministry of Science, Technology and Research (MOSTI) supports creation, research and development, as well as commercialisation of innovative activities in Malaysia. MOSTI also coordinates with Malaysia Industry-Government Group for High Technology, the Multimedia Development Corporation, the Malaysian Technology Development Corporation, the National Science Research Council and five research universities, which expands both scientific input and output.

## **HOW THE GII RANKS COUNTRIES**

Innovation Inputs	<ul style="list-style-type: none"> <li>• Institutions (political, regulatory, business environment)</li> <li>• Human capital and research (education, tertiary education, R&amp;D)</li> <li>• Infrastructure (ICTs, ecological sustainability)</li> <li>• Market sophistication (credit, investment, trade)</li> <li>• Business sophistication (knowledge workers, innovation linkages, knowledge absorption)</li> </ul>
Innovation Outputs	<ul style="list-style-type: none"> <li>• Knowledge and technology outputs (creation, impact and diffusion of knowledge)</li> <li>• Creative outputs (intangible assets, creative goods and services, online creativity)</li> </ul>

### **Closing rich-poor divides**

The proliferation of cheap and simple technology is helping such countries. While gaps remain in overall innovation performance between rich and poor countries, the technology gap is narrowing. This is due to the fact that recent new technologies are globalised from the start, such as 3D printing, cloud computing, and big data analytics, lowering production and labour costs for firms in emerging countries.

But the innovation achievers realise that technology alone is not enough to foster an innovative environment. Getting the right talent and an institutional framework in place appear to be the most difficult of all inputs to achieve both in general but for low-income countries in particular. In Malaysia for instance, the government has created the institutional setting for solving collective action problems but much remains to be done to establish linkages between these organisations and private firms. In talent, strong university-industry links have been built in industrial training of undergraduates, but those linkages are not so obvious in R&D and in the placement of academics in firms. It has not yet reached Taiwan's level of sophistication in incubating, commercialising and spinning off local tech firms. In addition, large numbers of Malaysian professionals are living in Singapore, the US, Australia and the UK and contributing to the innovative potential of those countries. Attracting and retaining knowledge workers is a pressing issue.

Countries at higher income levels benefit from established education and research facilities and traditions that allows them to translate their inputs into innovative outputs. Immigration openness in the UAE, Singapore and

Switzerland has made these three countries strong performers.

### **Don't stop now**

Despite slowing growth, we don't anticipate a slowdown in R&D spending and investment. This should always be protected even at times of economic uncertainty. Countries have learned that stop-and-go policies in R&D costs more in the long run and is hugely disruptive to innovation potential. A commitment to fostering innovation goes hand-in-hand with investment and policies.

Emphasis in emerging countries should be placed on gaining knowledge as much as on providing the right framework conditions that stimulate a process of innovation and knowledge diffusion: political stability and supportive institutions; good and widespread technical and tertiary education to enhance absorptive capacity; reliable and widespread basic infrastructure; provision of information and communication technology (ICT) property rights; and stronger links and interaction between publicly funded research institutes and private companies.

The ultimate policy mix will depend on a country's broader development objectives, and will have to be made in collaboration with all the stakeholders to maximise the chances of success. Good coordination between ministries and between the private and the government sectors is therefore essential.

*The GII is created by INSEAD, the [World Intellectual Property Organisation](#) (WIPO) and [Cornell University](#). It covers 141 economies around the world and uses 79 indicators across a range of themes. The full report can be downloaded for free [here](#).*

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