

FINANCIAL TIMES

FT SPECIAL REPORT **JAPAN** WEDNESDAY OCTOBER 12 2005

World leader in patents concentrates on incremental innovations

Japan's exporters live or die by their ability to innovate, writes David Pilling. With labour costs 20 times as high as in China, unless companies can produce advanced, difficult-to-copy technology – where the labour content is low and the value-added component high – the country will inevitably lose out.

Japan's need to innovate, and to protect those innovations, makes it the world's most prolific patenter. In crude terms, it beats the US on patents filed by about 2:1.

That flatters Japan, because the bulk of its patents come in electronics, telecoms and IT, where incremental innovations are easier to come by.

In life sciences, arguably the industry of the future, Japan does not score nearly so well.

Some experts still argue that Japan's proven innovative genius is more suited to constant improvements in integrated manufacturing processes than to blue-sky inventions.

They blame an education system that can inhibit free and iconoclastic thinking.

In Pharmaceutical, Japan is a bigger market than the UK, Germany and France combined. Yet it has no drugs company to match GlaxoSmithKline or Sanofi Aventis,

not to mention Switzerland's Novartis or Roche.

It is in integrated manufacturing that Japan's competitive edge is still sharp. In machine tools, car manufacturing and high end electronics, clusters of manufacturers and subcontractors participate in an iterative process that produces constant step-by-step improvements.

The success of companies such as Toyota, Canon and a host of less-well-known component and machine-tool makers demonstrates that process is still bearing fruit. In areas such as steppers, the machines used to produce semi-conductor wafers, capacitors and tiny motors, Japan still excels.

But even in core areas, its companies cannot afford to rest on their laurels. Both Sony and Sanyo are closing or considering closing whole lines of business, including TVs and white goods, where products have become commoditised and Japan's competitive advantage eroded.

The government is painfully aware of the challenges. It has been busily cutting budgets in every area of government, except one: science and technology.

Innovation indicator: Japan compared

Country	Patents Filed	World Rank
Japan	342,726	1
US	167,183	2
South Korea	71,483	3
Germany	55,478	4
China	40,426	5
Russia	19,104	6

Japanese Patents filed by sector

Sector	Per cent
Telecoms, IT and Electronics	43
Chemicals, Materials and Instrumentation	37
Automotive and Transport	10
Energy and Power	4
Pharmaceutical and Medical	3
Food and Agriculture	3

Tables (top) shows number of patents applied for in Japan and published worldwide in 2004, compared with five other patent authorities. Where patents are applied for in more than one country, the priority country is the original country of application.

Source: Thomson Scientific www.scientific.thomson.com

FT SPECIAL REPORT **INVESTING IN RUSSIA** TUESDAY OCTOBER 11 2005

Innovation in technology lags

Russia lags in technology innovation but is strong in food and agriculture, according to the number of patents applied for.

Just 9 per cent of patent applications in Russia were in telecoms, IT and electronics, against 40 per cent to 50 per cent for developed countries.

But the percentage of its patent applications that cover food and agriculture sectors is the second highest in the world – only Hungary scores higher, but with a much lower overall number of applications.

The figures come from a Country Innovations Index that shows, for patents published worldwide in 2004, the original country of application and the areas of technology covered.

The index, compiled by Thomson Scientific, the information company, aims to illustrate innovation activity. Ed White, a Thomson Scientific senior analyst who put together the index, says: "Patents are potential

products. They have the potential to become money-making ventures."

The tables right show the number of patents applied for in Russia and published worldwide in 2004, compared with five other relevant countries.

Italy has a similar gross domestic product to Russia but its number of patent applications is far behind, putting it at 10th in the innovation league, against Russia's sixth place.

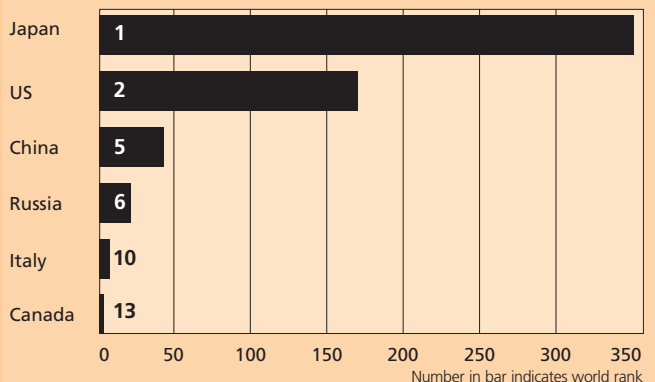
Patents filed in the energy and power area, which Moscow has acknowledged as a key industrial sector by bringing back further under central state control in the past year, are high in global terms – only Norway and Romania beating Russia for the percentage of applications in this sector.

Rohit Jaggi

Source: Thomson Scientific www.scientific.thomson.com

Innovation indicator 2004

Number of patents filed ('000)



Russian patents filed by sector (%)

