2012 THOMSON REUTERS TOP 100 GLOBAL INNOVATORS

HONORING THE WORLD LEADERS IN INNOVATION

FINDINGS AND METHODOLOGY
2012

THOMSON REUTERS™

$1.05 BILLION

$4.5 BILLION

$12.5 BILLION

"INNOVATION IS THE SPECIFIC INSTRUMENT OF ENTREPRENEURSHIP. THE ACT THAT ENDOWS RESOURCES WITH A NEW CAPACITY TO CREATE WEALTH."

-Peter Drucker

Management Expert, Author and Teacher

INNOVATION is the cornerstone of economic growth and success, for both the companies that innovate and the countries that encourage it. Innovation can also be the competitive lever that gives one company the rights and offensive positioning over another in the fierce environment in which they operate.

The numbers speak for themselves:

- $1.05 billion
- $4.5 billion
- $12.5 billion

The last 18 months have underscored just how important it is to innovate—and to protect those inventions via intellectual property rights. With patent evaluations of more than $1 billion, the telecommunications industry witnessed firsthand how lucrative (or costly) it can be when you hold (or don't hold) the rights to an invention critical to the evolution of a technology area.

Daily news headlines continue to feature the latest on the Apple v. Samsung patent battle (which resulted in a jury granting Apple **$1.05 billion** in a patent infringement verdict in August 2012). Nortel sold its 6,000-document patent portfolio for **$4.5 billion** to Rockstar Consortium, a group comprising companies such as Apple, Microsoft, RIM, and others (June 2011). And, Google purchased Motorola Mobility for the astounding sum of **$12.5 billion** (May 2011). Granted, not all patent cases are of this magnitude, but the fact that three recent ones topped the $1 billion mark is a feat in and of itself.

Patents are finally being recognized as a viable asset class with revenue-generating potential far exceeding other sources. This concept has also reached those who teach economics and are shaping future generations' understanding of what is needed to excel in the 21st century, as evidenced by Princeton University Press publishing the textbook: "Innovation, Intellectual Property, and Economic Growth" (by Christine Greenhalgh and Mark Rogers).

This begs the question: What constitutes innovation? How is it that some companies are so successful and others limp along? What separates the leaders from the followers?

Henry Ford gave us a glimpse of what that difference is when he said, "If I had asked my customers what they wanted, they would have said a faster horse." His defiance to building what the customer said they wanted captures the essence of the innovative organization. Innovators are on the cutting edge of their fields. They're not just creating what product development says the customer wants (which is important but not the be all and end all), but they're setting our future course. They're telling us what we need, even though we may not realize it at the moment.

This future course is secured through the protection of inventions via intellectual property rights. Companies that invest in R&D, protect their inventions (locally and globally) and are recognized by others as having founding technology are those who are paving the way for our future. They are the leaders in innovation.

The second annual Thomson Reuters 2012 Top 100 Global Innovators analysis and report demonstrates the powerful insights that can be gleaned from studying patent information and measures innovation from an unbiased and scientific perspective.

Patent activity has always been an indicator of innovation. However, innovation comprises much more than mere patent filing volume. This award acknowledges innovation in its multidimensional form. Being recognized as a Top 100 Global Innovator is a prestigious distinction. It confirms an organization's commitment to progressing innovation globally, to the protection of ideas and to the commercialization of inventions.

The Thomson Reuters 2012 Top 100 Global Innovators are the world leaders in innovation.

[Note: at time of publication, Apple acquired full ownership of more than 1,000 of the patents it jointly owned through Rockstar as part of the Nortel acquisition, but Apple didn't have sole ownership which it needed for offensive positioning (November 2012).]

METHODOLOGY

The methodology used to determine the 2012 Top 100 Global Innovators was developed by Thomson Reuters and approved by several leading IP-centric organizations. While the final methodology is proprietary, we recognize the need for a deeper explanation of how the list was compiled.

The following is a closer look at the data used and how it was calculated and analyzed. Thomson Reuters Derwent World Patents Index® (DWPI℠), Derwent Patents Citation Index™, Quadrilateral Patent Index™, and Thomson Innovation®, the IP intelligence and collaboration platform, were utilized in our research and analysis. Comparative analysis was done using the Thomson Reuters Advanced Analytics platform, the single source for financial professionals to turn information into action.

The criteria for the Thomson Reuters Top 100 Global Innovator award are:

1: **SUCCESS**
Patenting an invention through one or more patent offices is expensive. Not all patent applications pass through the examination process and are granted. The success metric measures the ratio of published applications (those patents which are filed and publicly published by the patent office but not yet granted) to granted patents over the most recent three years.

2: **GLOBAL**
Protecting an invention in major world markets is an indication of the significant value a company places on its intellectual property. The number of "innovative" patents that have quadrilateral patents in their patent families, according to the Thomson Reuters Quadrilateral Patent Index™, was calculated to create a ratio that shows which companies place a high value on their portfolios in major world markets. The quadrilateral patent authorities comprise the Chinese Patent Office, the European Patent Office, the Japanese Patent Office, and the United States Patent & Trademark Office.

3: **INFLUENCE**
The impact of an invention "down the line" can be determined by looking at how often it is subsequently cited by other companies in their inventions. Through the Thomson Reuters Derwent Patents Citation Index™ database, we counted citations to each organizations' patents over the most recent five years, excluding self-citations, and put a weighted value on this measurement of 50 percent.

4: **VOLUME**
This award focuses on companies that are responsible for generating a sizeable amount of innovation. All organizations with 100 or more "innovative" patents from the most recent three years were included in our analysis. An "innovative" patent is defined as the first publication in a patent document of a new technology, drug, business process, etc. In DWPI, these are called "basic" patents. DWPI provides a record of patents published by nearly 50 patent issuing authorities worldwide to enable a comprehensive picture of the innovation landscape. Subsequent filings for the same invention are recorded as "equivalents" in DWPI and collated in "patent families" and, for this analysis, were not included.

"If I had asked my customers what they wanted, they would have said a faster horse."

-Henry Ford, on the essence of the innovative organization

KEY FINDINGS & ECONOMIC INFLUENCE

The Thomson Reuters Top 100 Global Innovator companies are world leaders of innovation and economic growth. Their influence and contributions, both nationally and internationally, cannot be underestimated. As stated by a 2012 U.S. Department of Commerce report: "Innovation is the key driver of competitiveness, wage and job growth, and longterm economic growth."[1]

Using our proprietary data and analysis tools, coupled with the expertise of our IP Services team, we confirmed the value the Top 100 Global Innovators deliver to their shareholders, employees and the nations in which they reside:

- The Top 100 Global Innovators outperformed the S&P 500 in terms of market capitalized weighted revenue by three percent (15 percent versus 12 percent)
- The Top 100 Global Innovators outperformed the S&P 500 in market capitalized weighted R&D spend by four percent (11 percent versus seven percent)
- The publicly-traded Top 100 Global Innovator organizations had a 15 percent increase in cumulative stock value comparing the end of 2011 to mid-October 2012
- The Top 100 Global Innovator organizations added 124,214 new jobs year over year

Other key findings (explored in more detail later in this report) include:

- Universities were part of the list for the first time in 2012, with two making the Top 100, both from South Korea
- Government agencies made the list for the first time in 2012, represented by the U.S. Department of the Army and the U.S. Department of the Navy
- There was a 133 percent increase in automotive industry representation year over year (7 in 2012 versus just 3 in 2011)

These points underscore the significance for recipients of being a Thomson Reuters Top 100 Global Innovator. This designation proves that companies that invest in innovation and protect and enforce their intellectual assets are more likely to contribute to economic growth, both within their organizations and the nations in which they reside.

"Undoubtedly the capability to innovate and to bring innovation successfully to market will be a crucial determinant of the global competitiveness of nations over the coming decade. There is growing awareness among policymakers that innovative activity is the main driver of economic progress and well-being as well as a potential factor in meeting global challenges in domains such as the environment and health."

-OECD paper on "Innovation and Growth"

1 http://www.commerce.gov/sites/default/files/documents/2012/january/competes_010511_0.pdf

INTRODUCING THE THOMSON REUTERS 2012 TOP 100 GLOBAL INNOVATORS

COMPANY	COUNTRY	INDUSTRY
3M Company	USA	Chemical
Advanced Micro Devices	USA	Semiconductor & Electronic Components
Alcatel-Lucent	France	Telecommunication & Equipment
Altera*	USA	Semiconductor & Electronic Components
Analog Devices	USA	Semiconductor & Electronic Components
Apple	USA	Telecommunication & Equipment
Arkema	France	Chemical
AT&T*	USA	Telecommunication & Equipment
Avaya	USA	Telecommunication & Equipment
Boeing	USA	Aerospace
Brother Industries	Japan	Computer Hardware
Canon	Japan	Computer Hardware
Chevron	USA	Chemical
CNRS, The French National Center for Scientific Research	France	Scientific Research
Commissariat à l'Energie Atomique	France	Scientific Research
Corning	USA	Semiconductor & Electronic Components
Delphi*	USA	Automotive
Denso Corporation	Japan	Transportation Equipment
Dow Chemical Company	USA	Chemical
DuPont	USA	Chemical
Eaton Corporation	USA	Electrical Products
EMC Corporation*	USA	Computer Hardware
Emerson	USA	Machinery
Ericsson	Sweden	Telecommunication & Equipment
European Aeronautic Defence and Space Company	France	Aerospace
Exxon Mobil	USA	Petroleum
FANUC	Japan	Electrical Products
Ford*	USA	Automotive
FUJIFILM*	Japan	Machinery
Fujitsu	Japan	Computer Hardware
General Electric	USA	Consumer Products
Goodyear Tire & Rubber	USA	Industrial
Google*	USA	Media/ Internet Search & Navigation Systems

**New to the Top 100 list for 2012*

"Never before in history has innovation offered promise of so much to so many in so short a time."

-Bill Gates, Microsoft

THE 2012 TOP 100 GLOBAL INNOVATORS

COMPANY	COUNTRY	INDUSTRY
Hewlett-Packard	USA	Computer Hardware
Hitachi	Japan	Computer Hardware
Honda Motor Company	Japan	Automotive
Honeywell International	USA	Electrical Products
IBM	USA	Computer Hardware
IFP Energies Nouvelles	France	Scientific Research
Intel	USA	Semiconductor & Electronic Components
Jatco*	Japan	Automotive
John Deere*	USA	Machinery
Korea Advanced Institute of Science and Technology*	S. Korea	Colleges & Universities
Korea Electronics Technology Institute*	S. Korea	Scientific Research
Korea Research Institute of Chemical Technology*	S. Korea	Scientific Research
LG Electronics	S. Korea	Consumer Products
Lockheed Martin*	USA	Transportation Equipment
L'Oréal	France	Consumer Products
LSI Corporation	USA	Semiconductor & Electronic Components
LSIS	S. Korea	Semiconductor & Electronic Components
Marvell*	USA	Semiconductor & Electronic Components
Michelin	France	Industrial
Micron	USA	Semiconductor & Electronic Components
Microsoft	USA	Computer Software
Mitsubishi Electric	Japan	Machinery
Mitsubishi Heavy Industries*	Japan	Machinery
Monsanto*	USA	Agriculture & Forestry
Motorola	USA	Telecommunication & Equipment
NEC	Japan	Computer Hardware
Nike*	USA	Consumer Products
Nippon Steel & Sumitomo Metal*	Japan	Primary Metals
Nitto Denko	Japan	Chemical
NTT	Japan	Telecommunication & Equipment
Olympus	Japan	Healthcare Products
Panasonic	Japan	Consumer Products
Pohang University of Science and Technology*	S. Korea	Colleges & Universities
Procter & Gamble	USA	Consumer Products

**New to the Top 100 list for 2012*

THE TOP 100 GLOBAL INNOVATORS

COMPANY	COUNTRY	INDUSTRY
Qualcomm	USA	Semiconductor & Electronic Components
Raytheon	USA	Transportation Equipment
Renault*	France	Automotive
Ricoh*	Japan	Computer Hardware
Roche	Switzerland	Pharmaceuticals
Rockwell Automation	USA	Electrical Products
Saint-Gobain	France	Industrial
Samsung Electronics	S. Korea	Semiconductor & Electronic Components
SanDisk	USA	Semiconductor & Electronic Components
Sandvik	Sweden	Machinery
Scania	Sweden	Transportation Equipment
Seagate*	USA	Computer Hardware
Seiko Epson	Japan	Computer Hardware
Sharp	Japan	Semiconductor & Electronic Components
Shin-Etsu Chemical	Japan	Chemical
Siemens	Germany	Electrical Products
Snecma	France	Transportation Equipment
Solvay	Belgium	Chemical
Sony	Japan	Consumer Products
STMicroelectronics*	Switzerland	Semiconductor & Electronic Components
Symantec	USA	Computer Software
TDK*	Japan	Semiconductor & Electronic Components
TE Connectivity	Switzerland	Semiconductor & Electronic Components
Texas Instruments*	USA	Semiconductor & Electronic Components
Thales*	France	Transportation Equipment
Toshiba	Japan	Computer Hardware
Toyota Motor Corporation	Japan	Automotive
U.S. Department of the Army*	USA	U.S. Federal Government Agencies
U.S. Department of the Navy*	USA	U.S. Federal Government Agencies
United Technologies	USA	Transportation Equipment
Valeo*	France	Automotive
Xerox	USA	Computer Hardware
Xilinx*	USA	Semiconductor & Electronic Components

**New to the Top 100 list for 2012*

GEOGRAPHIC BREAKOUT

Thomson Reuters 2012 Top 100 Global Innovator companies span the globe. The largest percentage is from North America, specifically the U.S., with 47 percent. Asia accounts for 32 percent and Europe for 21 percent. A breakout of the Top 100 companies by country is in Figure 1.

In Asia, Japan leads with 25 percent of the representation. It has representative companies in 10 of the 21 industries, the most prevalent of which is Computer Hardware. The only other Asian nation to make the 2012 list is South Korea, with 7 percent of the overall companies/organizations. That is a 75 percent increase in representation there year over year, with four new entrants, two of which are universities and two of which are scientific research centers.

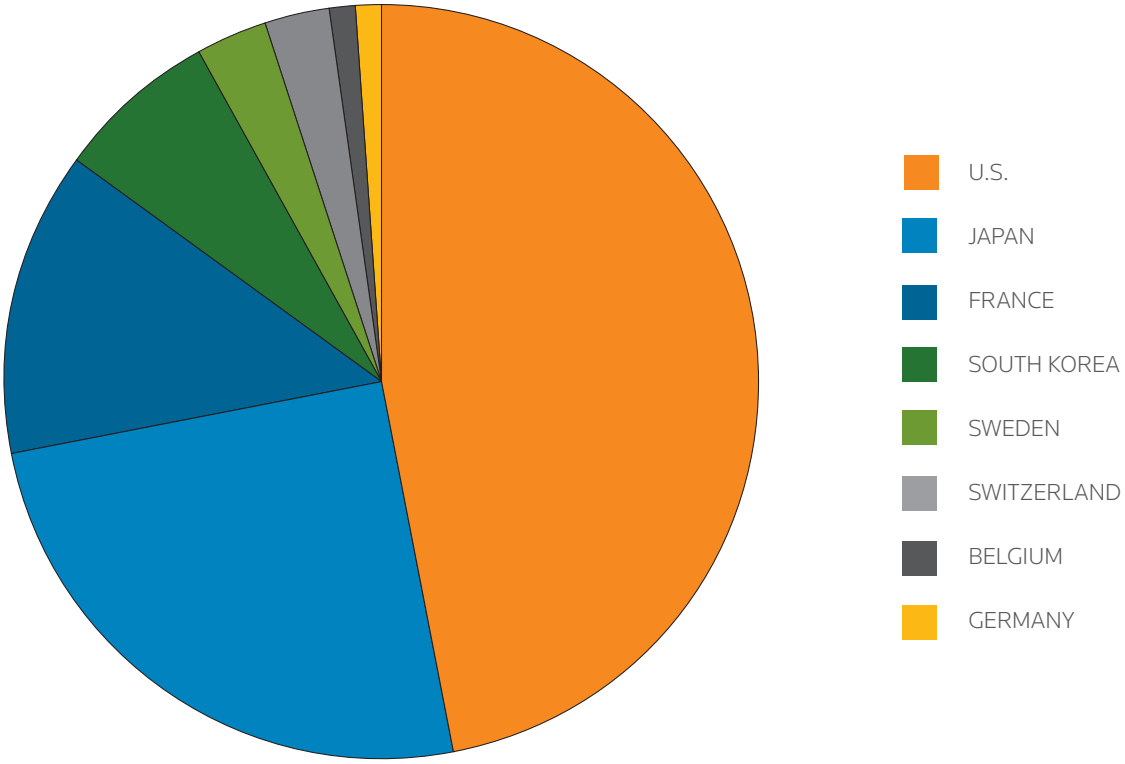
There are not any companies from China again this year. This is not completely unexpected, as Chinese innovators tend to have a more national focus on the protection of their inventions. As such, they score lower on the "Global" metric. As a point of comparison, innovators from the United States protect nearly 50 percent of their inventions internationally (outside of the U.S.); however in China that number is just six percent. Although China leads the world in patent volume, its inventions have not been marketed globally. As China expands the protection of its inventions, an indicator of their global significance, we expect to see Chinese companies/institutions make and increase in number on the list.

Across Europe there are five nations with one or more companies in the top 100 list. France is the innovation leader with 13 organizations spread across nine of the 21 industries, an 18 percent increase over 2011. France continues to be the nation with the most scientific research centers. This year's group - IFP Energies Nouvelles; CNRS, the French National Center for Scientific Research; and Commissariat à l'énergie atomique - are proving to be quite innovative and influential in driving future technology.

Germany, Liechtenstein, Sweden and the Netherlands all dropped in their representation on the list, two dropping off the list completely (Liechtenstein and the Netherlands). That is not to say that innovation slowed in these countries. To the contrary, several 2011 Top 100 Global Innovators actually increased their level of innovation year over year, however not enough to overcome some of the new entrants.

GEOGRAPHIC DISTRIBUTION OF 2012 TOP 100 GLOBAL INNOVATORS

FIGURE 1



2012 vs 2011 TOP 100 GLOBAL INNOVATORS GEOGRAPHIC DISTRIBUTION

FIGURE 1A

COUNTRY	2012 PERCENTAGE	2011 PERCENTAGE
Belgium	**1%**	0%
France	**13%**	11%
Germany	**1%**	4%
Japan	**25%**	27%
Liechtenstein	**0%**	1%
Netherlands	**0%**	4%
South Korea	**7%**	4%
Sweden	**3%**	6%
Switzerland	**3%**	3%
USA	**47%**	40%

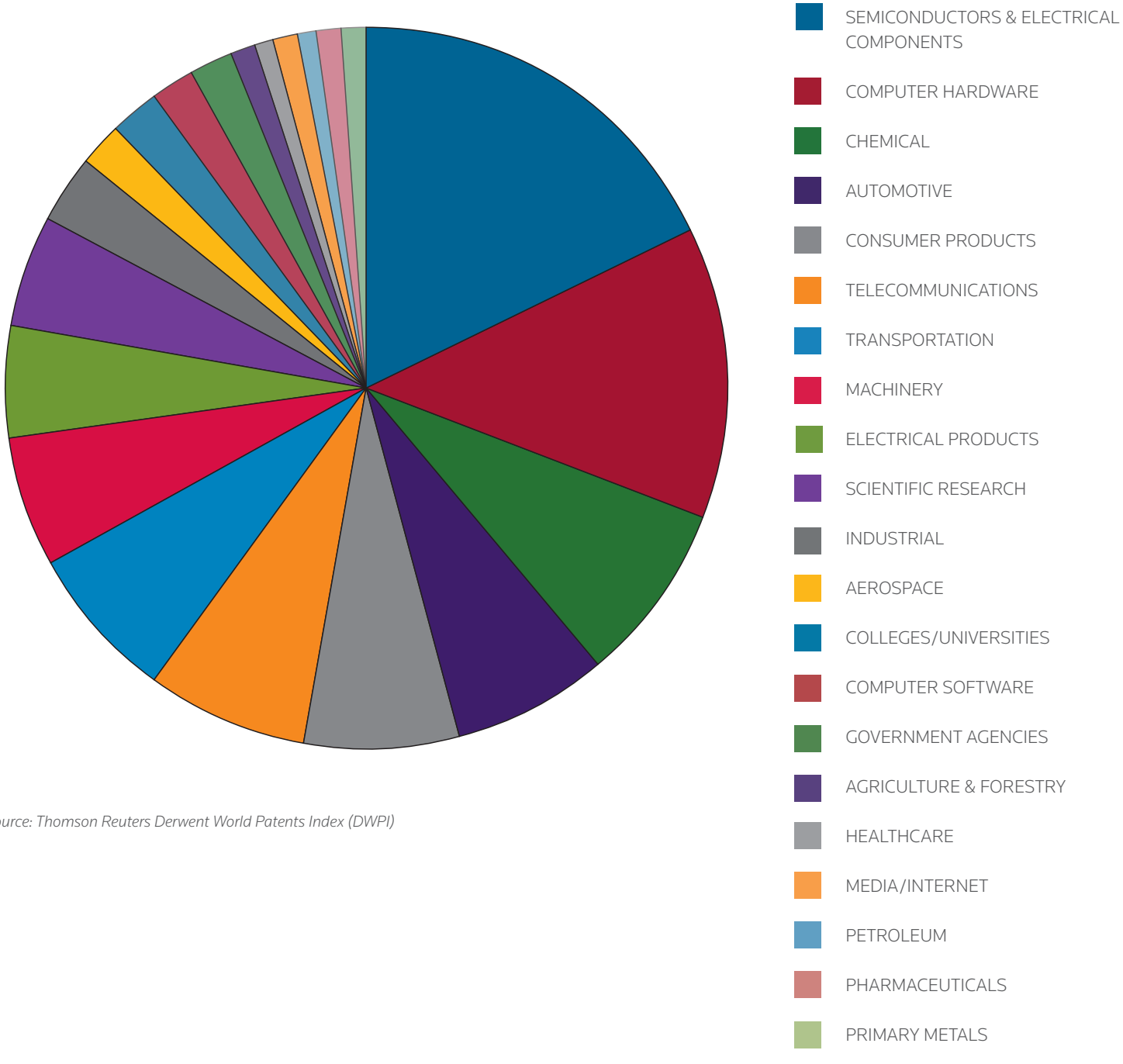
Source: Thomson Reuters Derwent World Patents Index (DWPI)

INDUSTRY BREAKOUT

Expectedly, manufacturing-based industries continue to top the 2012 list as these organizations typically focus on creating and protecting new products via intellectual property rights.. The patent gives its holder a competitive advantage: the right to exclude others from the invention for a period of up to 20 years (in most jurisdictions). Ideas in and of themselves may be brilliant, but it is the putting of that idea into action and protecting it that can turn concepts into cash. A full list of the industries and representation across the 100 organizations is shown in Figure 2.

INDUSTRY REPRESENTATION OF THOMSON REUTERS 2012 TOP 100 GLOBAL INNOVATORS

FIGURE 2



Source: Thomson Reuters Derwent World Patents Index (DWPI)

2012 vs 2011 TOP 100 GLOBAL INNOVATORS INDUSTRY REPRESENTATION

FIGURE 2A

INDUSTRY	2012 PERCENTAGE	2011 PERCENTAGE
Aerospace	**2%**	3%
Agriculture & Forestry	**1%**	0%
Automotive	**7%**	3%
Chemical	**8%**	13%
Colleges/Universities	**2%**	0%
Computer Hardware	**13%**	11%
Computer Software	**2%**	4%
Consumer Products	**7%**	9%
Electrical Products	**5%**	6%
Government Agencies	**2%**	0%
Healthcare	**1%**	4%
Industrial	**3%**	6%
Machinery	**6%**	8%
Media/Internet	**1%**	0%
Petroleum	**1%**	2%
Pharmaceuticals	**1%**	2%
Primary Metals	**1%**	0%
Scientific Research	**5%**	3%
Semiconductors & Electronic Components	**18%**	0%
Telecommunications	**7%**	7%
Transportation	**7%**	5%

Source: Thomson Reuters Derwent World Patents Index (DWPI)

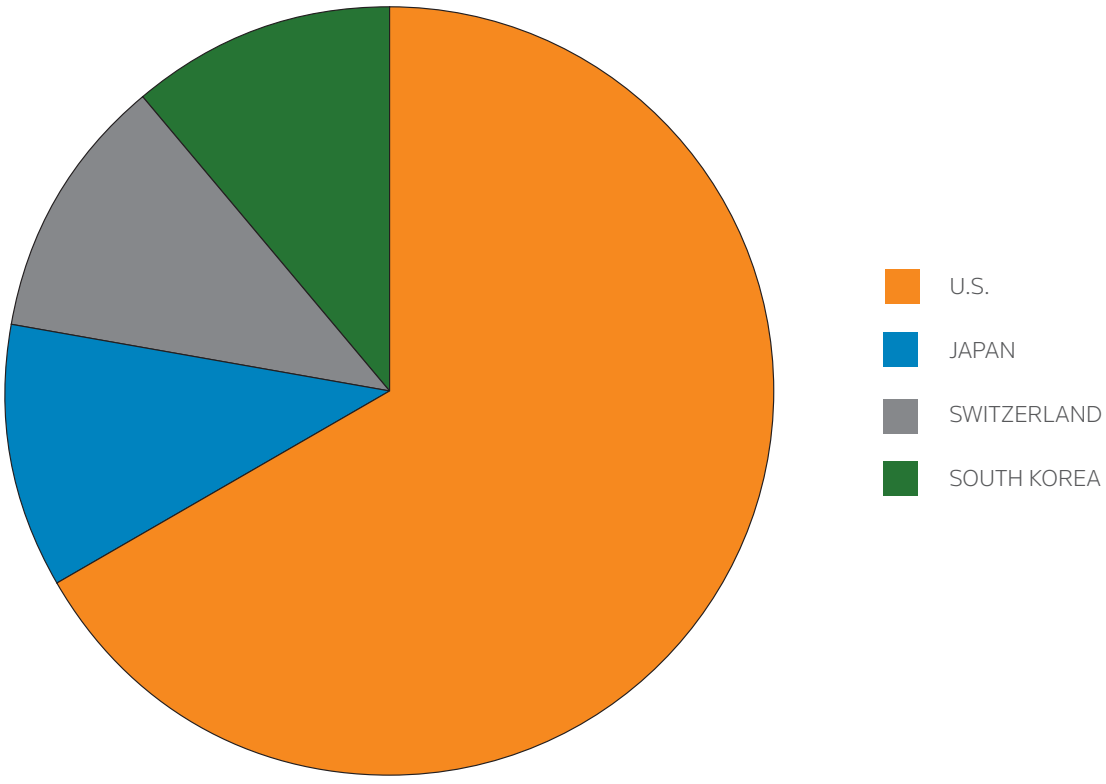
"An idea in and of itself may be brilliant. But it is the putting of that idea into action and protecting it that can turn concepts into cash."

-David Brown, Managing Director, IP Solutions, Thomson Reuters

The most prevalent industry within the Top 100 list is Semiconductor & Electronic Components for the second year in a row; 18 of the 100 companies are from this sector, a 29 percent increase over 2011. The four new entrants in this area specialize in analog and logic devices. Twelve, or 67 percent, of the 18 are from the U.S.; the remaining six are evenly split between Japan, South Korea and Switzerland. Semiconductors are a critical component of many items used daily, from smart phones, to computers and automobiles to more—the growth here reflects just how essential they are to life in the 21st century. Figure 3 shows the geographic distribution of these companies.

THOMSON REUTERS TOP 100 GLOBAL INNOVATORS DISTRIBUTION: SEMICONDUCTOR & ELECTRONIC COMPONENTS

FIGURE 3

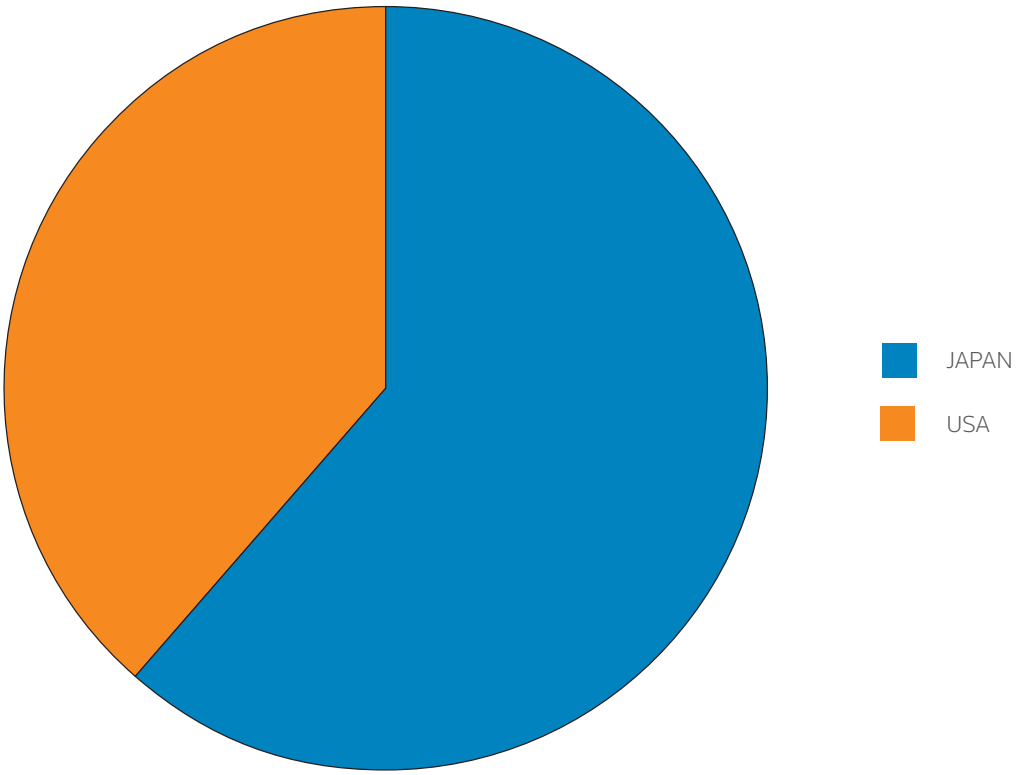


Source: Thomson Reuters Derwent World Patents Index (DWPI)

The next most prevalent industry across the Top 100 organizations is Computer Hardware, with 13 percent of the Top 100 residing in this category. The increase in this category is due to the explosive growth in the need to manage and store big data. Eight (or 53 percent) of the 13 are from Japan, the remaining are from the U.S. Figure 4 shows the geographic distribution of Computer Hardware companies.

THOMSON REUTERS TOP 100 GLOBAL INNOVATORS DISTRIBUTION: COMPUTER HARDWARE

FIGURE 4

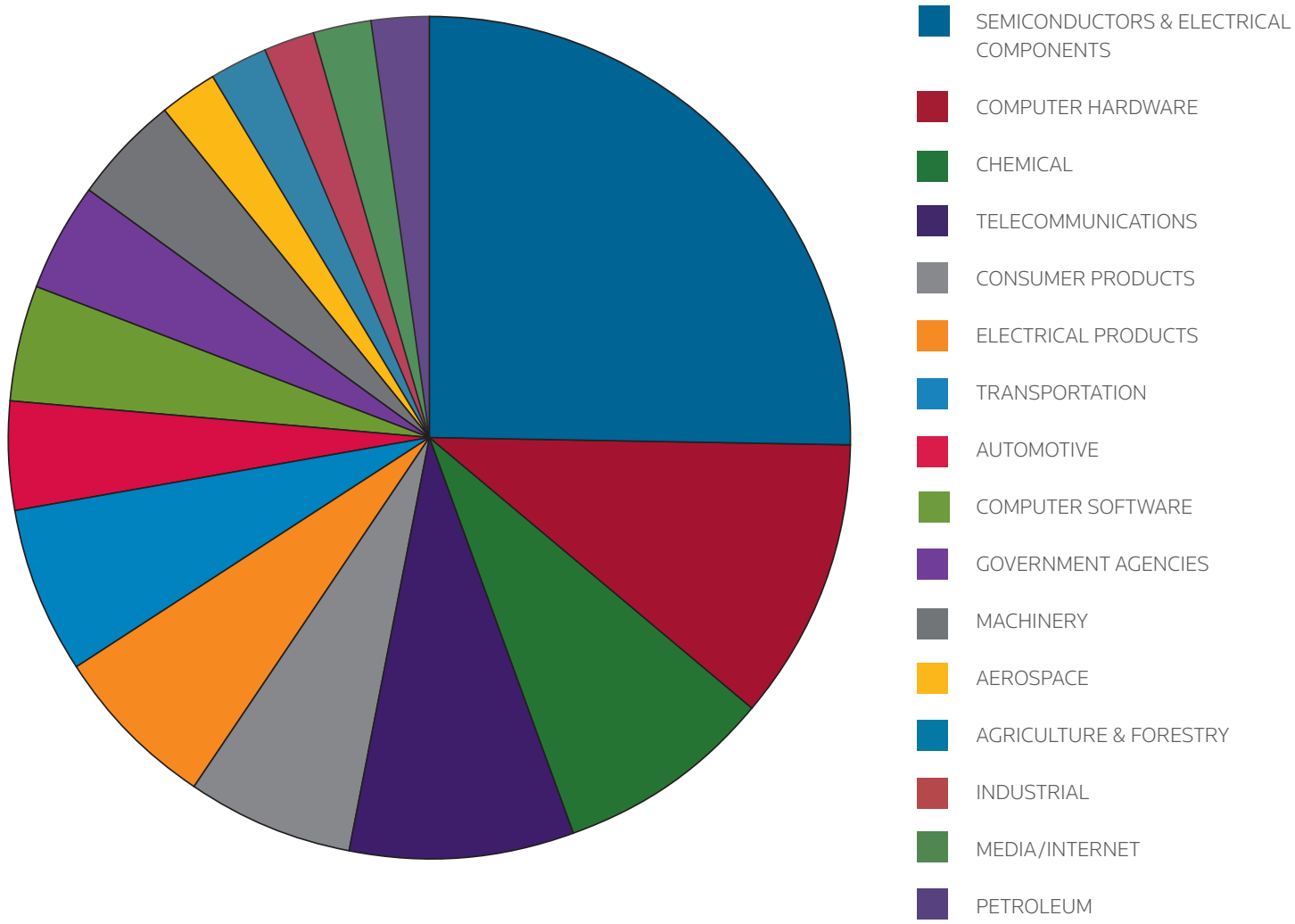


Source: Thomson Reuters Derwent World Patents Index (DWPI)

Industry breakouts for the U.S., Europe and Japan are shown in the next series of figures. In the US, the leading industry represented is Semiconductor & Electronic Components, comprising 12 percent of the overall list, followed by Computer Hardware, with five companies or five percent of the overall list. The U.S. has representation in 16 of the 21 industries for 2012.

INDUSTRY BREAKOUT - NORTH AMERICA: UNITED STATES

FIGURE 5

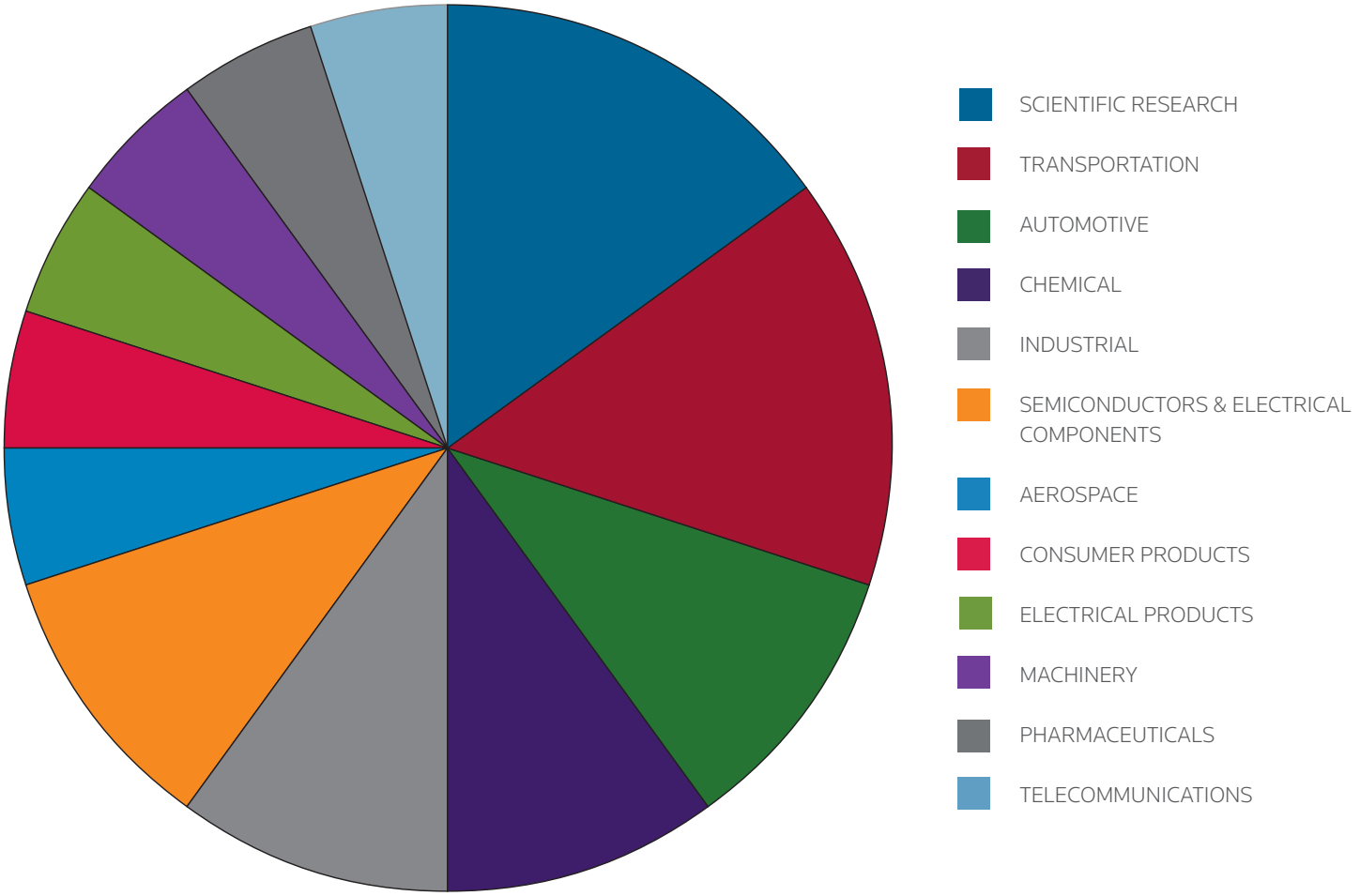


Source: Thomson Reuters Derwent World Patents Index (DWPI)

For Europe, the top two industries are transportation equipment (three percent of overall list total) and scientific research centers (also with three percent of the overall list). In 2011, Europe led the world in Machinery Manufacturing; this year, there is just one such manufacturer on the list from Europe. The significant decrease in this area is predominantly attributed to the fact that housing starts have been much lower over the past few years due to economic conditions, which impacted innovation of such equipments.

INDUSTRY BREAKOUT - EUROPE: BELGIUM, FRANCE, GERMANY, SWEDEN, SWITZERLAND

FIGURE 6

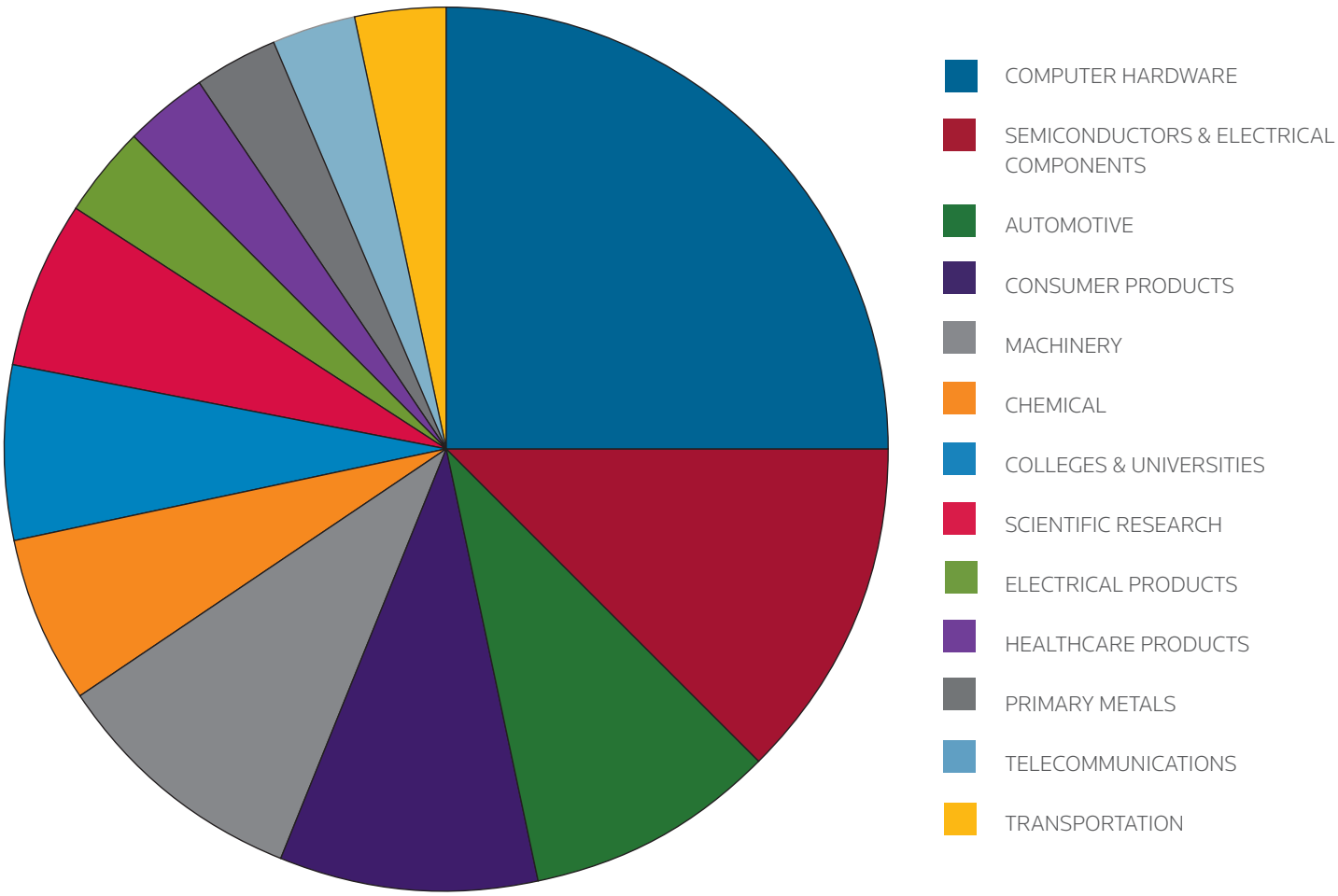


Source: Thomson Reuters Derwent World Patents Index (DWPI)

In Asia, the predominant industry is Computer Hardware, comprising 25 percent of the region's overall representation, followed by Semiconductor & Electronic Components at 13 percent. Asia leads the world in computer hardware manufacturing with 62 percent of the companies from this region.

INDUSTRY BREAKOUT - ASIA: JAPAN, SOUTH KOREA

FIGURE 7



Source: Thomson Reuters Derwent World Patents Index (DWPI)

MOST INNOVATIVE PHARMACEUTICAL ORGANIZATIONS

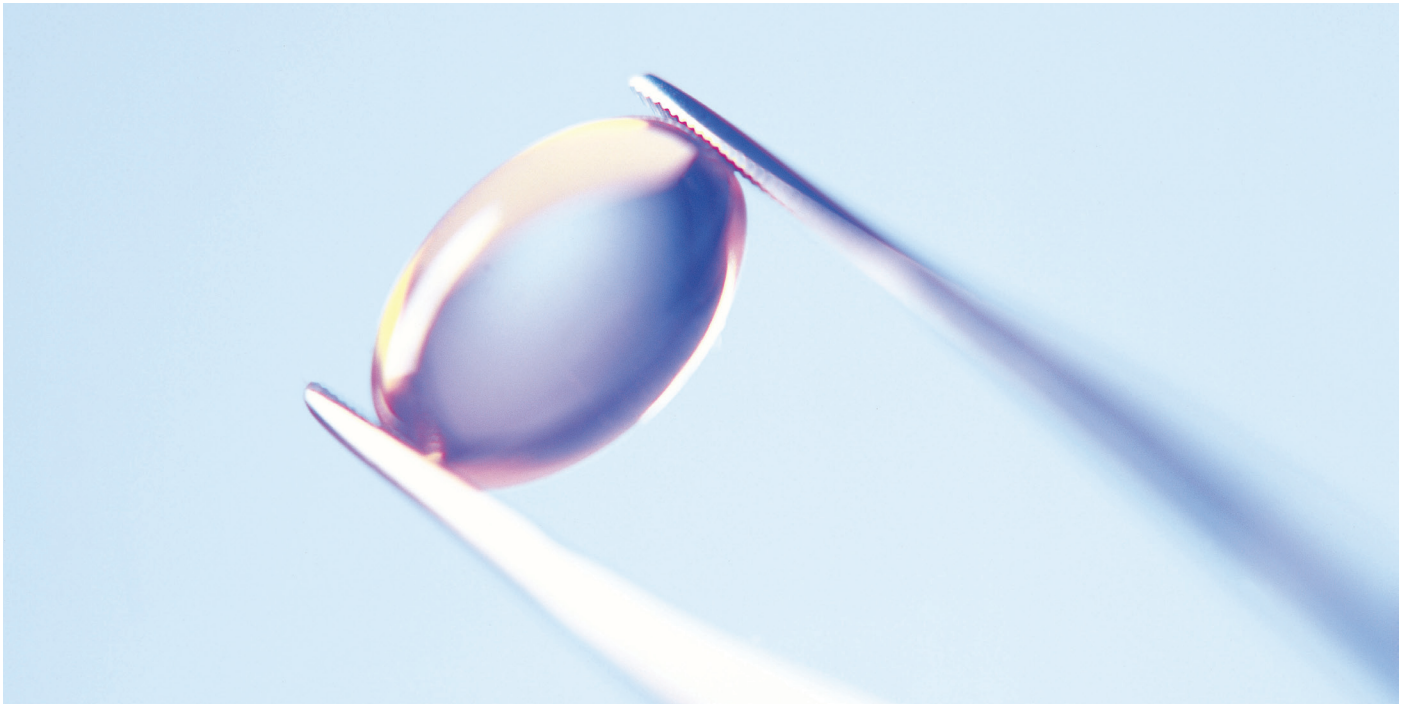
As mentioned in this report, the Top 100 Global Innovator methodology tends to favor fast-paced, high-tech industries, where the iterative nature of innovation occurs more frequently due to shorter product lifecycles and demand for new features and functionality. That is not to say, however, that innovation is only taking place in technology-focused organizations.

Molecule-focused companies, such as pharmaceuticals, are also extremely innovative. However, it is harder for them to make the list due to fewer patent filings and the fact that many inventions do not score highly on the Global metric, which is the protection of an invention with the USPTO, EPO, JPO and SIPO.

Given these factors, we are announcing the top four pharmaceutical innovators in 2012, according to our metrics. They are:

Roche (2012 Top 100 Global Innovator)
Abbott
Bayer
Bristol Myers Squibb

Beyond Roche, these three additional pharmaceutical companies met the 100+ unique invention threshold for 2012 but did not score highly enough across other areas to be named a Top 100 Global Innovator.



CONCLUSION

Intellectual property is much more than a set of rights enabling defensive posturing for the freedom to exclude. Patents are the asset class of the 21st century with the potential to generate revenue, transform economies and contribute to growth.

The Thomson Reuters 2012 Top 100 Global Innovators are the world leaders in innovation. Some are expected companies on the list; others are new entrants that represent the future evolution of our world. All have one thing in common: those who innovate, and protect their inventions with IP rights, have greater chances for long-term success than those who don't.

A shift witnessed by this year's honoree list shows innovation migrating into sectors that previously didn't compete alongside corporations. The 2012 Top 100 Global Innovators provide proof of the collaborative nature of innovation—open innovation—and how universities, government agencies and scientific research centers are becoming more critical players in the innovation process.

We also see how companies/industries that just a few years ago were on the brink of demise have re-invented themselves to remain competitive and also address environmental and societal needs. Case in point: the automotive industry. Ford Motor Company made the list for the first time this year, alongside six other automotive companies. Ford's dedication to alternative-powered vehicles and commitment to innovation on the part of its leadership influenced the inventions it's bringing to market and protecting with IP.

All of the 2012 recipients instill a culture of innovation within their organizations and invest in R&D to keep the inventive process alive. CEOs of some of this year's organizations explain their perspectives on innovation on the top100innovators.com website. Their organizations stand out from others in that they encourage idea generation and the invention process. They have established systems for vetting their innovation funnels and determining which ideas are worthy of protection. They rigorously monitor prior art and the competitive landscape, and prosecute the best-of-the-best in terms of concept generation.

But, that is just the beginning. The Top 100 Global Innovator companies also look at innovation through a global lens. They determine the market potential of an invention and actively seek protection for it around the world. Their strategic rationale may differ, but they are one in the same when it comes to seeking and capitalizing on the global potential of their inventions.

Finally, they are viewed by their peers, competitors, and others as making an impactful difference. Their inventions are oftentimes significantly cited by others and are seen as founding technologies in their respective areas.

Thomson Reuters congratulates and thanks the 2012 Top 100 Global Innovators for the spirit of innovation they foster in their organizations and their adherence to IP systems and the protection of intellectual rights.

ABOUT THOMSON REUTERS

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