“Next came the Patent laws. These began in England in 1624; and, in this country, with the adoption of our constitution. Before then, any man might instantly use what another had invented; so that the inventor had no special advantage from his own invention. The patent system changed this; secured to the inventor, for a limited time, the exclusive use of his invention; and thereby added the fuel of interest to the fire of genius, in the discovery and production of new and useful things.” — Abraham Lincoln, April 6, 1858

“Throughout history, humankind has harnessed a spirit of creativity to transcend barriers that set us apart. Our shared destiny as nations and as peoples calls on all of us—no matter who we are or where we come from—to work together to build new inventions, spur innovation, and use the wisdom borne out of restless inquiry to expand our collective conscience and discover our common humanity…. Whether through the music or movies that inspire us, the literature that moves us, or the technologies we rely on each day, ingenuity and innovation serve as the foundation upon which we will continue to grow our economies and bridge our cultural identities.” —President Barack Obama, April 26, 2016

INTRODUCTION

Patents, trademarks, and copyrights are the principal means for establishing ownership rights to the creations, inventions, and brands that can be used to generate tangible economic benefits to their owners. Intellectual property (IP) incentivizes the creation of new goods and services by conferring exclusive rights to their creators, making innovation and creative endeavors indispensable elements that drive economic growth and sustain the competitive edge of the US.

European countries also have played a major part in shaping a modern and balanced system of IP rights which not only guarantees innovators their due reward but also stimulates a competitive market. It is nevertheless vital to ensure that the system remains a useful instrument in implementing new innovation...
policies designed to achieve those goals. At the same time, there have been several calls from industry for indicators to measure the economic impact of IP rights (IPRS). Moreover, in view of the question marks which, in public debate, have sometimes been raised over IP’s role in supporting innovation and creativity, it is essential that facts and figures be produced to ensure such debate is based on sound evidence.

As a result, the 20th century recorded unprecedented improvements in the health, economic well-being, and overall quality of life for the entire world, along with the West. Companies have relied on IP as one of the leading tools with which such advances were promoted and realized in the West, then trickled down to the rest of the world through globalization to benefit the humanity.

**IP-Intensive Industries in the US**

IP-Intensive Industries (IPIIs) continue to be an integral part of the US economy in the 21st century. Trademark-intensive industries are the largest in number and contribute the most employment with 23.7 million jobs in 2014 (up from 22.6 million in 2010). Copyright-intensive industries supplied 5.6 million jobs (compared to 5.1 million in 2010) followed by patent-intensive industries with 3.9 million jobs (3.8 million in 2010). While IPIIs directly accounted for 27.9 million jobs either on their payrolls or under contract in 2014, they also indirectly supported 17.6 million more supply chain jobs throughout the economy. Thus, IPIIs supported 45.5 million jobs, about 30 percent of all employment.

However, the proportion of total employment in IPIIs declined slightly to 18.2 percent (from 18.8 percent in 2010). The value added by IPIIs increased substantially in both total amount and GDP share between 2010 and 2014. IPIIs accounted for $6.6 trillion in value added in 2014, up more than $1.5 trillion (30 percent) from $5.06 trillion in 2010.
Accordingly, the share of total US GDP attributable to IPIIs increased from 34.8 percent in 2010 to 38.2 percent in 2014. Revenue specific to the licensing of IP rights totaled $115.2 billion in 2012, with 28 industries deriving revenues from licensing.

Exports of services by IPIIs totaled about $81 billion in 2012 and accounted for approximately 12.3 percent of total US private services exported in 2012 (see figure embedded right, Exports of IP-Intensive Service-Providing Industries, 2012).

In addition, IPIIs paid 47 percent higher weekly wages compared to other industries, according to a joint report by the Economics & Statistics Administration and the US Patent and Trademark Office (USPTO).

**IPIIs in the European Union (EU)**

Innovation is one of the areas covered by the five key targets set in Europe 2020, the ten-year growth strategy adopted by the EU with to create a more competitive economy with higher employment. It has never been so important to foster the virtuous circle leading from Research and Development (R&D) investment to jobs – via innovation, competitive advantage and economic success – as in today’s world of increasingly globalized markets and the knowledge economy.
This process depends on several different factors, but an efficient system of IPR undoubtedly ranks among the most important, given IP’s capacity to encourage creativity and innovation, in all its various forms, throughout the economy.

<table>
<thead>
<tr>
<th>IPIs</th>
<th>Employment</th>
<th>Share of total employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMs</td>
<td>45.508.046</td>
<td>20.8%</td>
</tr>
<tr>
<td>Designs</td>
<td>26.657.617</td>
<td>12.2%</td>
</tr>
<tr>
<td>Patents</td>
<td>22.446.133</td>
<td>10.3%</td>
</tr>
<tr>
<td>Copyrights</td>
<td>7.049.405</td>
<td>3.2%</td>
</tr>
<tr>
<td>GI</td>
<td>374.345</td>
<td>0.2%</td>
</tr>
<tr>
<td>IPIIs</td>
<td>56.493.661</td>
<td>25.9%</td>
</tr>
<tr>
<td>Total EU</td>
<td>218.400.733</td>
<td></td>
</tr>
</tbody>
</table>

Note: Unlike the USPTO study above, this study included designs. There are 13 exclusively design-intensive industries, employing 3.4 million workers in the EU. If those industries were removed from the analysis, the employment share of IPIIs in the EU would be 24.3%, still higher than the result reached in the US.

IPIIs are shown to have generated almost 26% of all jobs in the EU during the period 2008–2010, with almost 21% in trade mark-intensive industries, 12% in design-intensive industries, 10% in patent-intensive industries, and smaller proportions in copyright-intensive and GI-intensive industries. On average over this period, 56.5 million Europeans were employed by IPIIs, out of a total employment of approximately 218 million. In addition, another 20 million jobs were generated in industries that supply goods and services to the IPIIs. Taking indirect jobs into account, the total number of IP-dependent jobs rises to just under 77 million (35.1%). Over the same period, IPIIs generated almost 39% of total economic activity (GDP) in the EU, worth € 4.7 trillion. They also accounted for most of the EU’s trade with the rest of the world, with design-intensive, copyright-intensive and GI-intensive industries generating a trade surplus.

The average weekly wage in IPIIs is € 715, compared with € 507 in non–IPIIs – a difference of 41%. This wage premium is 31% in design-intensive industries, 42% in trade mark-intensive industries, 46% in GI-intensive industries, 64% in patent-intensive industries and 69% in copyright-intensive industries.
Based on the above two studies, the EU and the US economies have a similar structure due to their similar level of development. However, in terms of the IP, the contribution of IPIIs is higher in the EU.

Employment 26% EU > 19% US  
GDP 39% EU > 35% US

IPIIs in the Indian Union

Today, the Indian pharmaceutical industry is in the forefront of India’s science-based industries, thanks to the globalization. Since the opening of the market to reforms in 1991 and compliance with GATT/TRIPS (effective 1995) in 2005, the Indian pharmaceutical industry has grown to an estimated worth $4.5 billion industry, growing at about 8 to 9 percent annually.

The European Union is among India’s top trading partners. Commerce between EU nations and India more than doubled between 2003 and 2011 to €79.9 billion, from €28.6 billion; private EU investment flowing into India more than tripled during the same period, despite the fact that the evidence on the role of IPRs as a determinant of innovative activity is quite weak. Some Indians believe that the stronger the IPRs, the weaker the innovative activity, adversely affecting the IPIIs.

Contrary to the rosy picture painted above, the Global Intellectual Property Center Index (GIPCI) now ranks India dead last among 25 major economies in terms of intellectual-property protection, behind its fellow members in the BRIC group of emerging markets, and rivals Brazil, Russia, and China. The GIPCI asserts that if India were to establish an intellectual-property regime palatable to Europe, the pharmaceutical investment in the country would jump further by 2020, which would translate into some 44,000 new Indian jobs over the next half-decade.
**REFERENCES AND NOTES**

1. Dr. Rao Vepachedu is a registered patent attorney with extensive experience in the management of intellectual property and extensive experience in research and teaching. He currently works for Cardinal Intellectual Property (CIP), Cardinal Risk Management (CRM), and Cardinal Law Group (CLG). In addition, he is the president of Vepachedu Educational Foundation Inc. (www.vepachedu.org), a 501(c) (3) educational foundation. For more information visit: www.linkedin.com/in/rao.vepachedu, http://www.avvo.com/profile/dashboard.


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One World One Family
AUM! SWASTI!
Om! Asatoma Sadgamaya, Tamasoma Jyotirgamaya, Mrityorma Amritamgamaya, Om Shantih, Shantih, Shantih! (Aum! Lead the world from wrong path to the right path, from ignorance to knowledge, from mortality to immortality, and peace!)

SWASTI! AUM!

Disclaimer All information is intended for your general knowledge only and is not a substitute for medical advice or treatment for special medical conditions or any specific health issues or starting a new fitness regimen.

“Where the mind is without fear and the head is held high, Where knowledge is free Where the world has not been broken up into fragments, By narrow domestic walls.” Rabindranath Tagore (1861-1941), Gitanjali, 1912.

THE INDIAN CONTINENT: INTELLECTUAL PROPERTY AND COMPUTERS: http://www.vepachedu.org/contents.htm
THE PHARMACEUTICAL INDUSTRY AND THE NEW PATENT REGIME IN THE INDIAN UNION:

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