



THE
LUZZATTO
GROUP

The Israel Annual National Report

2013-14

Including a special section on Israel's high-tech industry

Submitted to the Israeli Government
and decision-makers

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Preface

In this era of the global information economy, intellectual property is considered the most important resource possessed by corporations, companies and countries. This resource is not only an expression of technological innovation, but also reflects the core economic activity of the post-industrial, developed countries, which rely on intellectual assets (patents, trademarks, designs, knowledge, reputation, consumer loyalty, etc.) more than on tangible assets in developing their relative advantage.

Various studies have shown that in developed countries, intellectual property plays a decisive role in generating national wealth. In these countries, product from intellectual property amounts to \$354,000 per capita, compared to \$76,000 per capita from manufacturing and just \$9,500 per capita from natural resources. In other words, the pace of technological development has transformed the relative edge based on intellectual property into a key component of the economy.

For Israel, whose relative advantage relies on human capital, and which presents a technologically innovative economy, intellectual property is a strategic, national resource. Consequently, developing, maintaining and leveraging it may be deemed a clear-cut Israeli interest. In the same way, creating an environment favoring innovation, for both local inventors and researchers, as well as for multinational companies – which build development centers in Israel – can be seen as a real, existential need.

Over the past three decades, Israel underwent a fundamental economic revolution unprecedented in scale. At its heart was a transition from a closed, centralized economy, with a large public sector and a burdensome tax regime to an open and competitive market economy that attracts foreign investment and successfully integrates into global financial markets. At the same time, Israel altered the makeup of its economy, shifting its center of gravity from a labor-intensive industrial manufacturing economy to a knowledge-intensive economy based on

technological innovation. The result was the creation of a thriving high-tech industry, especially in software, Internet and telecommunications. The term “Startup Nation” to describe Israel is a reflection of a mix of unrelenting entrepreneurship, groundbreaking creative talent, impressive fundraising capabilities and an intense desire to succeed.

Nevertheless, in those years, Israel lagged behind in adjusting the bureaucratic-regulatory-legal work environment to match accepted world standards relating to intellectual property.

During the past five years, following Israel’s membership in a series of international treaties, and especially joining the Organisation for Economic Co-operation and Development (OECD), Israel advanced to another level. It hastened the adaptation of the work environment relating to intellectual property to accepted international standards, thereby matching other developed countries. This process is still ongoing, but the operational vector is clear, with Israel striving to have its domestic laws fully correspond to international law in all matters relating to intellectual property. The working assumption is that broadening the infrastructure for protecting and respecting intellectual property rights is an indicator of financial strength and leadership in technological innovation.

Most developed countries maintain a policy aimed at aggressively and actively promoting protection of intellectual property assets. The Western world’s leading economies, such as the United States and Japan, adopted far-reaching reforms that were managed and promoted directly by the heads of state, in order to circumvent any bureaucratic red tape en route to leveraging the intellectual property assets in their possession. In the U.S., the president established a special task force to review the issue of intellectual property, and in Japan,

the matter was transferred to the prime minister's direct responsibility. The European Union and its members also saw fit to seriously consider the matter of enforcing intellectual property rights, and a directive instructing EU members on how to promote enforcement was published in 2004.

Developing countries have not overlooked the importance of intellectual property either. China, for example, which has for years been known as a counterfeiter's paradise, launched a series of steps to stem the phenomenon and create an intellectual property system that would enable outside investors to transfer technology without fear of copying or counterfeiting. China still has a long way to go with regard to enforcement of the law and preventing piracy and counterfeits, which cause serious financial damage to multinational corporations and countries that export to China.

Given this situation, the next stage Israel is expected to reach, after adopting all the relevant binding international treaties, is the active leveraging of the intellectual property assets in its possession. One of the key recommendations to emerge from the report that follows is the establishment of a national task force review and formulation of a comprehensive policy on intellectual property rights protection that will enable the State of Israel to be in line with developed countries and significantly promote the intangible assets at its disposal (situated in universities, hospitals, the defense industry and elsewhere). Later on, the option should be considered of establishing a government authority, subordinate to the Justice and Economy ministries, tasked with formulating and advancing a comprehensive policy relating to intellectual property.

This report is intended to provide a current overview of how intellectual property issues are handled nationally and the improvements and important changes accomplished in the past few years. It further reviews issues needing more

treatment before the legal and practical environment in Israel becomes on a par with standards in the developed world. Additionally, the report highlights the hidden potential of leveraging intellectual property assets found in the government/public sector.

We believe that caring for Israel's intellectual property is a national priority of the highest order.

Israel, as a leading technological and scientific innovator that exports knowledge and technology in giant deals to leading international companies, as well as to developing countries, must place intellectual property where it deserves to be in the national order of priorities. Proper handling of intellectual assets emanating from business and the public sector serves as a growth engine for a contemporary economy. It will result in increased income for the State, additional jobs and strengthening of the State's foreign relations and international reputation. Moreover, it will prevent a brain drain of Israel's intellectual talent.

We hope that this report by the Luzzatto Group's research division will assist the Government and decision-makers in formulating long-term national policy to foster, maintain and leverage Israel's intellectual property for the benefit of the people and the economy.



Dr. Kfir Luzzatto
President, The Luzzatto Group
kfir@luzzatto.co.il

Background

Intellectual property is considered one of the most influential factors in the economic growth of corporations and countries. Over the past few decades, this field has experienced the intense process of globalization and been very much affected by technological change.

The spread of the technology and the Internet into every aspect of our lives has transformed intellectual property into something of greater financial importance than ever before. Given the unique nature of intellectual property, its growing importance in international commerce, the globalization process and technology development, the judicial framework that provides the legal and regulatory basis for protecting intellectual property rights is of the utmost significance.

Israel, as an outstanding, major player in the global technology market, has recently taken upon itself the task of adapting its managerial norms, domestic law, regulatory system and enforcement relating to intellectual property to accepted standards in the developed world. This followed many years during which Israel lagged behind developed countries and even found itself placed on the uncomplimentary list of countries being closely monitored due to intellectual property rights infringements.

Among other steps, Israel has implemented the following:

- Reforms and changes in the Patent Office, including a substantial increase in manpower to handle patent applications
- Adjustments to domestic law to match binding international treaties, such as the Madrid Protocol
- Joining the OECD (in progress)
- Enhanced enforcement against counterfeit goods and counterfeit goods trade

A positive outcome of Israel's efforts was its improved placement in the international intellectual property

rating list. In 2013, U.S. Department of Commerce representatives working on the Special 301 Report placed Israel on the Watch List of countries that should be monitored. On February 28, 2014 it has been announced by The Office of the United States Trade Representative that Israel will be removed from the Intellectual Property Watch List.

We should point out that the International Intellectual Property Alliance (IIPA), which unites over 1,900 American companies that adhere to copyright laws to help artists and creators protect their work, is a known international organization that assesses the level of copyright protection in various countries. Once a year, the Alliance presents a report to U.S. trade representatives on the level of intellectual property protection, and recommends to the Department of Commerce how to rank them. The report focuses on financial losses incurred by industries in the countries due to copyright infringement and the reasons behind these losses.

Below are detailed the major changes and reforms that Israel enacted:

2.1 Updating and empowering intellectual property registration

The initial contact of entrepreneurs, inventors, companies and corporations when setting out to legally protect their inventions and ideas is with the government body which is responsible for the registration of patent, designs and trademarks. The quality of this agency's work has a direct and apparent impact on the willingness of these entities, as well as foreign investors, to work in a country and therefore affects the extent of technological and industrial development. Until some six years ago, the patent registration process in Israel was somewhat convoluted and entailed bureaucratic delays. While the

Increasing efficiency and output

Since then, the Patent Office has taken a number of steps to increase efficiency and output. Consequently, the average waiting time for an initial patent examination in Israel dropped to 32.5 months, whereas in the biology field the waiting time decreased to just 24 months. As shown in Illustration 1, the number of patents issued in 2011 more than doubled from those issued in 2010. Israel thereby joined the worldwide trend in reducing the waiting time for patent applications examination. Likewise, in 2011 there was a decline in waiting time for second examinations (which in the past could take up to several years) to an average of just six months.

Advanced publication

The Israel Patent Office also adopted international standards and, in accordance with the Patent Law amendment of July 2012, a patent application will now be available for online examination 18 months after its submission (or the date when priority applies). The time period contrasts to the previous situation where an application was opened for review only after it was accepted, a process which, as noted, could take years.

Authorization as an international examination authority

One major accomplishment of the Patent Office was its authorization to act as an international authority for prior searching and examining of international patents under the auspices of the Patent Cooperation Treaty (PCT). This authorization, resulting from a 2009 decision of the World Intellectual Property Organization (WIPO), an arm of the UN, entrenched Israel's status among countries promoting international projects relating to intellectual property and provided important international recognition of Israel's capabilities in the field of technology.

The new service will meet the growing international needs of Israeli applicants. Before this change took effect, international patent applications submitted by Israelis were examined by international search and

review committees in Europe and the United States, based on the Israeli applicant's preference. The change enables patents to be reviewed in Israel making the process convenient, inexpensive and accessible for Israeli applicants. Accordingly, the Israeli authority expanded its manpower hiring efforts prior to its transformation into an international authority for preliminary search and examination.

Examination of green patent application

The Israel Patent Office followed the lead of many Western patent offices in promoting a policy encouraging submission of green patent applications for inventions which contribute to protecting and improving the environment. Examination of a patent application that meets the criteria published by the Patent Office and that is classified as green, will begin within three months of its classification date.

The PPH

In mid-2012, the Patent Office renewed its cooperation with the U.S. Patent and Trademark Office's (USPTO) Patent Prosecution Highway (PPH) program, started as a pilot in 2011. In August of that year, the Israel Patent Office and USPTO expanded cooperation in this program and began the PCT PPH pilot (Illustration 2).

PPH is aimed at accelerating the examination of patents through cooperation of patent offices worldwide. An applicant who filed an application in two countries may, under the PPH pilot, ask for a fast-track examination of the application in a second country after receiving a favorable report in the first country. PPH thereby enables a participating patent office to rely on the work already done by other patent offices and thereby reduce its load and shorten the waiting time for an examination.

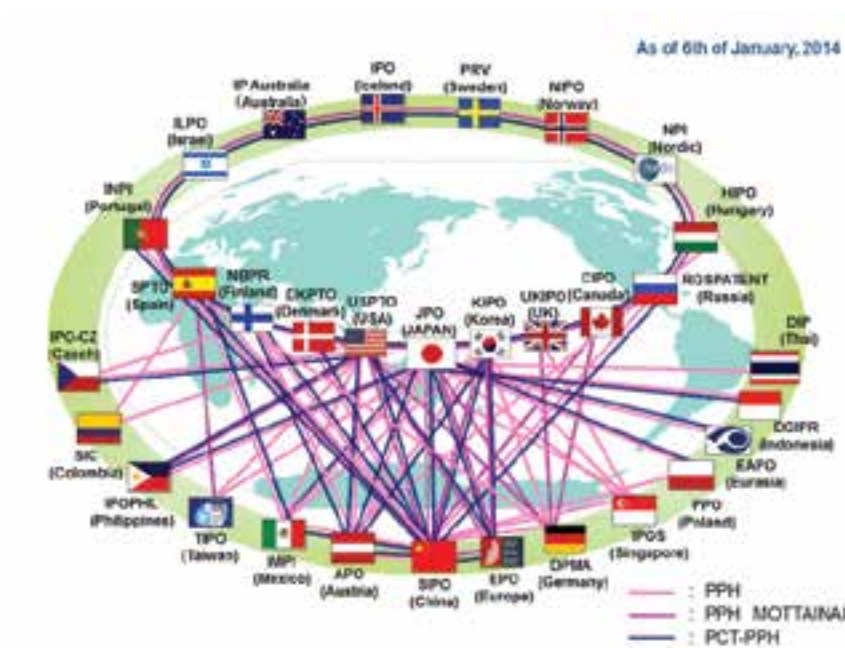


Illustration 2: Collaborations using the PPH Program

Source: Japan Patent Office (January, 2014)

2.2 Correlating domestic law to international treaties and joining the Madrid Protocol

Israel enacted a series of legislative amendments to correlate its intellectual property protocols to accepted standards in developed countries and to international treaties to which it is a signatory. Among other steps, patent regulations were amended to correspond to the Patent Cooperation Treaty, and new methods of filing (via DVD, CD and the Internet) were introduced.

The Madrid Protocol

In July 2010, Israel joined the international trademark treaty under the framework of the Madrid Protocol and

as of September 1 of that year (when the protocol went into effect in Israel), Israeli applicants were able to file applications to register international trademarks and claim protection for a registered trademark in other countries based on the Israeli trademark. It should be noted that before the implementation of the new system according to the Madrid Protocol, any person or entity wishing to register a trademark in foreign countries had to go through a separate registration process in each country. This required the trademark holder to hire the services of a local lawyer or patent attorney in each country at considerable expense, thereby hindering the process of creating the best and most effective portfolio of trademarks in each target locale.

The Madrid Protocol, in effect, substantially simplified the process, shortened the timeframe and reduced the cost of trademark registration in a number of countries.

Israel's accession to the Madrid Protocol brought it on a par with the other member countries by instituting changes in Israeli trademark registration. Major changes included the following:

1. Applications for registering a trademark for several types of merchandise or services may be filed simultaneously. Previously, separate applications were necessary for each type of product and/or service.
2. A trademark may be registered for 10 years, and can be renewed for additional 10-year periods (unlimited times).

In 2010, 8,017 trademark applications were filed in Israel, of which 463 were international applications in accordance with the Madrid Protocol (since Israel joined on September 1, 2010). In 2011, 8,804 trademark applications were filed of which 3,858 were international applications in accordance with the Madrid Protocol. In 2012, there were 8,733 applications filed of which 4,226 were according to the Madrid Protocol.

2.3 Joining the Organization for Economic Co-operation and Development (OECD)

Following 15 years of negotiations, Israel joined the respected Organization for Economic Co-operation and Development in September 2010. It was the pinnacle of a concerted Israeli effort that was designated as a strategic goal by the Israeli government in 2000.

The OECD unites the world's economically developed countries. Its aim is to increase cooperation, while adhering to the highest international economic standards

in all matters relating to safeguarding, monitoring and overseeing intellectual property rights. In effect, one of the terms for Israel's accession to the organization was reducing the gaps in this area. OECD Secretary-General, Angel Gurría, who visited Israel in January 2010, spoke of intellectual property as one of the three problems that were impeding Israel's accession to the organization.

Israel's accession to the OECD is a key stepping stone to its integration into the global economy and reflects its commitment to meet the latest international standards, including those relating to intellectual property.

2.4 Increasing anti-counterfeit enforcement and the spread of counterfeit goods

Increased enforcement to prevent trade in counterfeit goods necessitated the granting of powers on the ground to customs agents. On an ongoing basis, customs authority workers enforce the legal terms of imports and exports, prevent illegal activities (fraud, drugs, money laundering and intellectual property infringements) and supervise all imports to and exports from Israel. One of the Customs Authority's jobs is to confiscate goods used in perpetrating a crime, or suspected as such, including intellectual property crimes.

The world at-large has in recent years taken a harder line in the punishment for those who smuggle goods in infringement of intellectual property laws. In Europe, for example, a law was enacted to streamline the fight against intellectual property infringements. The law significantly broadened the power of European customs officials, allowing them to act independently and without a request from a given company whose rights were violated, as it were.

In 1995, in the wake of the agreement that established the World Trade Organization and Israel's accession

to it, the State agreed to adapt its laws by the end of 1999 to the Agreement on Trade-Related Aspects of Intellectual Property Including Trade in Counterfeit Goods (TRIPS). As a result, the law was amended, and there were comprehensive changes in intellectual property legislation (but still none in the customs regulations).

The rationale behind the amendment was to ease the difficulties that could arise in international trade with regard to intellectual property rights by taking into account the necessity of protecting intellectual property and ensuring that the means of enforcing these rights would not be harmed in international trade. In effect, the law comes to implement most of the necessary revisions stipulated by the TRIPS Agreement and, as mentioned, following this amendment of the law, there was a comprehensive revision of intellectual property legislation. This was followed by a change in customs regulations, which entailed granting additional powers to Customs Authority officials.

The changes in legislation and additional powers provided holders of intellectual property rights tools to cope with those who violated their rights and opened up a new way for them to fight back. For example, they were given the option of approaching the Customs Authority and notifying it of an infringement. If convinced of infringements by the evidence that the copyright holder presented, customs agents could deem the imported goods as prohibited. Customs agents were also given the authority to delay the transfer of goods if there was ostensibly a copyright or trademark infringement.

2.5 Important intellectual property treaties

Below is a list of important intellectual property treaties relevant to Israel:

The Paris Convention

The Paris Convention addresses a number of significant

aspects of intellectual property law, with the most practical one being the use of the Priority Law. The Priority Law enables the first to file a patent application, design or trademark in a Paris Convention member country to reveal the invention, product design or logo in public for a specified period without fear that during that same period someone else will copy it and file to register in another country that is a signatory to the treaty (over 174 according to the WIPO). The Priority Law thereby inhibits one's ability to obtain an unfair marketing, commercial or legal advantage. In accordance with the Paris Convention, the first to file a patent application has 12-month priority to file a similar patent application in a Paris Convention member country and its expiration date will not be the date it was filed in this country, but the date the priority application was filed. This principle also applies to design applications for a period of six months and to trademarks for a period of six months.

PCT

The Patent Cooperation Treaty (PCT) enables the extension of the Priority Law from 12-month under the Paris Convention to 30 months (and sometimes 31 months) in member countries of the PCT (over 140 countries). During this 18-month period (referred to as the international stage), it is possible to obtain a search report and opinion, which provide considerable information on the weaknesses and strengths of a patent application, and allow for revisions in the application before the end of the international stage and validation to the national phase, when the application is filed in designated other countries.

The Madrid Protocol

The Madrid Protocol is a treaty enabling local trademark holders that registered a trademark with a contracting party (over 80 countries are contracting parties), to file similar international applications to register a trademark with all other contracting parties using a single form and for reduced fees.

The Nice Agreement

This agreement deals with classification of marks under 34 different types of goods and 11 service classifications (a total of 45 classifications). Israel joined this agreement in 1961.

The Berne Convention

This is the main treaty for the protection of literary and artistic works. The convention prohibits copying or translating a work without the permission of its author, copying without his or her permission other than for fair use, and broadcasting, screening or public reading of the work without permission, as well as making any change, rearrangement or distortion.

TRIPS – Trade-related Aspects of Intellectual Property Rights

TRIPS is an intellectual property agreement among World Trade Organization (WTO) members (over 150 countries), which took effect in 1995. When a country joins the WTO it automatically becomes a contracting party to the TRIPS Agreement. The agreement established a common denominator for intellectual property law in contracting parties. Countries must adopt the agreed provisions in their domestic laws within designated periods.

Israel's High-tech Industry

An in-depth look at Israel's high-tech industry provides an accurate picture of intellectual property in Israel due to the inseparable link between the technology industry and intellectual property. To a large extent, intellectual property, in its broadest sense reflects the essence of technological development and often even predicts it, due to the simple fact that entrepreneurs and developers register a patent before a product even comes on the market.

This is especially apparent in Israeli startups sold to foreign mega-corporations. In the decade from 2003-

2013, 80 Israeli companies were acquired for a total of \$14.3 billion. Corporate giants, such as Apple, EMC2, Cisco, IBM, Broadcom, Johnson & Johnson, Intel, Microsoft and others, acquired Israeli startups to obtain their innovative technologies that comprise intellectual property. Illustration 3 presents recent large acquisitions.

These acquisitions did not provide cash-flow, more customers or increased sales that justified the high prices paid. It was the valuable technological innovativeness that justified the price. There is no doubt that the intellectual property will also continue













Acquirer	Number of Acquisitions	Total Value \$m	Largest Acquisitions \$m
	10	6,556	NDS: 5000, Intucell: 450, P-Cube: 200
	3	2,905	RADLAN: 195 Galileo: 2700
	11	1,992	Telmap: 300 Oplus: 100
	12	1,693	Trusteer: 650, XIV: 300 Guardium: 225
	10	1,204	Provigent: 313 BroadLight: 195
	3	1,003	Waze: 966
	7	965	XtremIO: 435, ScaleIO: 250 Kashya: 153, Cyota (RSA): 145
	3	832	Shopping.com: 634
	2	740	Anobit: 390 PrimeSense: 350
	13	709	Gteko: 120 Kidaro: 100
	2	597	Omrix: 438 ColBar: 159
	4	150	Onavo: 150

Illustration 3: Acquisitions by leading international corporations

Source: IVC Research Center

to serve as Israeli companies' main attraction for multinational corporations. In other words, intellectual property is a reflection of technological innovation and is the core value in the sale and acquisition of high-tech companies.

Moreover, a review of the world's technological market today provides insight into the power of intellectual property from the extensive trading in patents. Technology patents are now a "hot commodity" and the object of legal battles among mega-corporations. Practically speaking, a patent's technological innovation is of great financial value and intellectual property is a key growth engine.

We see giant corporations making huge deals for the acquisition and sale of patents – Google acquired Motorola Communications for \$12.5 billion to obtain the rights to some 15,000 patents. Apple, Microsoft, RIM, Sony, Ericsson and EMC as a consortium acquired Nortel's patent portfolio for \$4.5 billion; similarly, Apple and Samsung are in the midst of an intense legal battle over smart phones and their patents.

3.1 The high-tech sector: impressive achievements and structural weaknesses

Over the last two decades Israel's high-tech industry achieved impressive gains. Israel had limited natural resources (at least until the discovery of natural gas reserves), encouraged higher education, civilian applications from the defense industry, and government assistance in raising venture capital. In the 1990s, these combined with the wave of immigration from the Commonwealth of Independent States and the worldwide computer industry's shift in emphasis from hardware to software provided a tremendous opening for dozens of Israeli companies, giving them a substantial edge in the global technology market. In the past few years, the Israeli technology industry

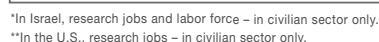
has been the Israeli economy's growth engine. It holds the largest share of the State of Israel's exports (about 50 percent of overall exports), has the greatest access to world capital markets and is the only sector that managed to attract significant foreign capital as equity, unlike the Government, the banks and the Electric Corporation, which only raised debt capital.

Israel also has one of the world's most highly developed infrastructure in all parameters necessary for a thriving technology industry. The number of engineers and scientists in Israel's population is among the world's highest (Illustration 4), as is its spending on civilian R&D as a percentage of GDP. The same is true of the number of new ventures relative to the population, which is the highest in the world. Moreover, 90 percent of the inventors are locals, just like in India, China, Japan and Korea (Illustration 5) and therefore most of the technology innovation in Israel is the product of Israeli inventors.

These and other impressive figures created fertile ground that drew the world's leading technological companies to Israel to open R&D centers to nourish their marketing networks with advanced technologies and products.

Given the above, it should be noted that in the past two years Israel's high-tech industry has been facing a decisive turning point, due to weakness experienced in several areas, including:

- Venture capital – Venture capital funds, the technology industry's key lifeline, experienced difficulties raising capital as a result of the global financial crisis and just about stopped being a major funder of early-stage companies.
- Incubator model – This model appears to have been exhausted, primarily because of the privatization of incubators.



Source: Central Bureau of Statistics, Science, Technology and Innovation indicators



Source: WIPO Database (March 2013)

- Declining pace of innovation – This is reflected in the substantial decrease in the number of new startup companies. It is also reflected in the number of international patent applications emanating from Israel during the past three years.
- Cutbacks in global R&D centers – Multinational corporations cut back their R&D centers in the wake of the global financial crisis, at the same time as rival countries offered tax incentives and other benefits in their bidding to attract new R&D centers.
- Crisis in the microchip industry – Israel's microchip industry is in the midst of a crisis caused by structural, technological and financial factors.
- Recent stagnation in Israeli high-tech exports – Data from the Export Institute and the Israel Association of Electronics and Software Industries show high-tech exports of \$21.5 billion in 2012, \$21 billion in 2011 and \$19.9 billion in 2010.
- Declining government investment in R&D – Israel is still first in the world in civilian R&D investment: about 4.4 percent, but the government's share is dropping (currently 20 percent of total R&D investment). This drop cancels out increased investment by the business sector.
- Hiring and training personnel – The pool of topnotch personnel who came here from countries of the former Soviet Union is aging. Israel lags behind its rivals – the Asian countries – in cultivating technologically oriented manpower to function as the next wave of engineers.

Below we take a closer look at the two most relevant issues – venture capital and technological innovation.

3.2 Venture capital funds: from surge to decline

Israeli venture capital funds, once the main engine of

the thriving Israeli high-tech industry, have in recent years gradually been losing their power and influence. This is apparent, first and foremost, in the substantial decline in capital raised by the funds. They are now less inclined to invest in young high-tech companies just starting out, and prefer to invest, in declining amounts, in riper and “safer” companies.

Clearly the global financial crisis majorly affected the funds' abilities to raise capital, and there is a clear correlation between the two as well as a shift in investor preferences. This is particularly true of the U.S. financial market, which was the primary source of venture capital for the Israeli funds.

Data gathered and analyzed by the Luzzatto Group's Research Division indicate that since 2000 there has been a considerable, consistent and ongoing decline in the capital raised by Israeli venture capital funds.

In 2000, the funds raised no less than \$2.8 billion; in 2005 the sum dropped to \$1.4 billion and further dropped to just \$200 million in 2009. In 2010, the funds stopped their efforts to raise capital completely. There was a mild recovery in 2011 as they managed to raise around \$900 million, but the overall trend has not changed and this level matched 2008 levels, albeit with great difficulty. In 2013 the venture capital funds raised approximately \$500 million, a somewhat lower scale than the sums they raised in 2012 (Illustration 6).

The 2014 yearly forecast is somewhat more encouraging and heralds a mild increase in the funds' capital raising efforts to an estimated \$ 1 billion (a 50% increase).

A wider perspective shows that from 1995-2013 venture capital funds raised approximately \$14.8 billion with the entire period broken down into six sub-periods, each reflecting a business cycle. The

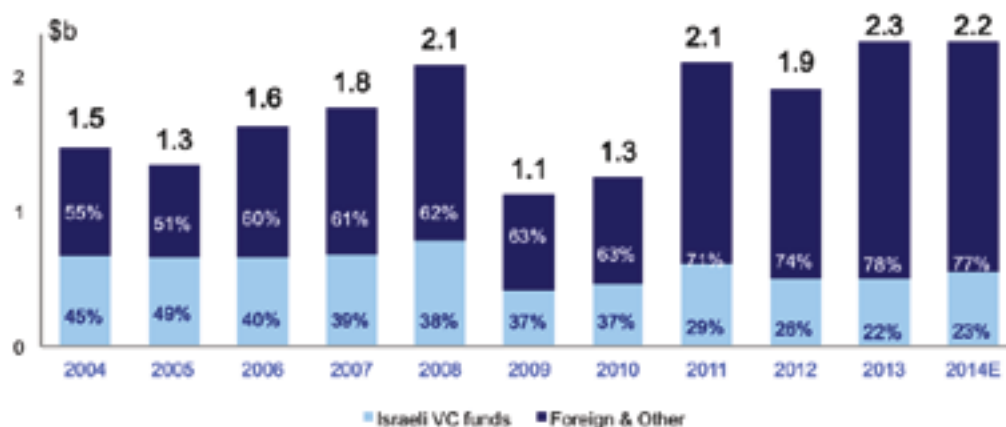


Illustration 7: Israeli VC Funds: \$5.2b, 30% of total.

Source: IVC Research Center (2013)

These figures demonstrate how dramatically the high-tech industry has changed. A decade ago, the dominant companies were communications and software companies. Today most of the companies are Internet and life science companies, which comprise more than 50 percent of the sector.

3.3 Slowdown in the creation of technological innovations

One measure of technological innovation is the number of startups that open each year (Illustration 9). In 2013, only 780 new companies opened, compared to 961 in 2012 and 818 in 2011. Since 234 companies closed in 2013 (compared to 343 and 384 in 2012 and 2011, respectively), the net number of new companies in 2013 totaled 546, a 12% decline from 2012. On average, over

a 10-year period, approximately 700 new companies opened per year. Decreased technological innovation is also reflected in the number of international patent applications (PCT) emanating from Israel which over the last three years dropped, in contrast to the global trend (Illustration 10). More importantly, this number also fell sharply in comparison to countries that are rivals in terms of technological innovation, such as India, China and South Korea, where the annual growth in filing international patent applications is about 10-15%, whereas in Israel there was an average decline of about 8% (see Illustration 11).

In general, patent applications are an indicator of technological innovativeness and apparently its pace is declining in Israel, relative to the past and to the rest of the world – mainly China, Korea and Japan. As far as

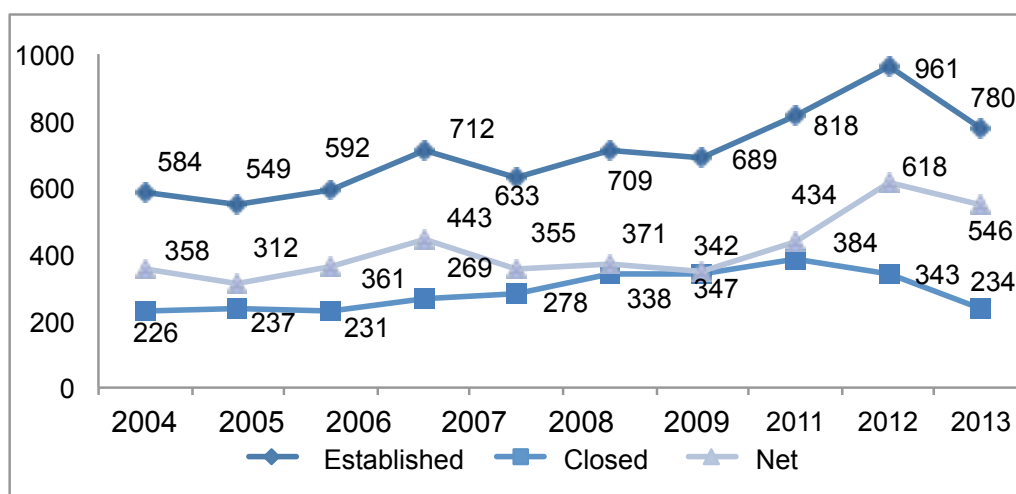


Illustration 9: New Startup Companies

(Source: IVC Research Center 2013)

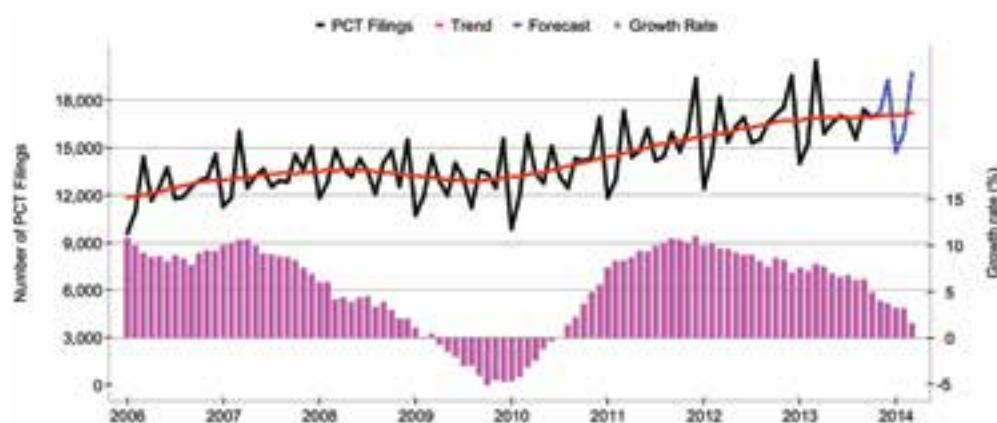


Illustration 10: Trends in PCT filings

(Source: WIPO database - January 2014)

The present data is fairly worrisome and warrants reassessment and appropriate planning. Israel still has an excellent infrastructure of human capital and a professional financial system that provides it with unique abilities, which can be used to strengthen the technology industry. According to data from the IMD Research Institute (Table 1), which studies markets around the world, Israel tops the list (Table 1) in all parameters essential to building and maintaining infrastructure for a thriving technology and high-tech industry. However, it is also clear that if Israel does not prepare accordingly, it will not be able to sustain its extraordinary achievements even with this impressive infrastructure. Responsible government policy should address this challenge. From a broader, national perspective, this is now the government's task – to support, encourage and invest in this successful industry which apparently is facing the beginning of a crisis.

**Table 1: Annual Research by IMD Center,
World Competitiveness Rankings**

FACTOR	RANKING
Technological Infrastructure	5
Scientific Infrastructure	4
Investment Incentives	2
Capital Market	2
Entrepreneurship	1
Flexibility and Adaptability to Changes in Business Environment	1
Venture Capital	2
Globalization Attitude	2
Labor Force Skill	4
Business Sector Spending on R&D	1
Scientific Research	1
Information Technology Skills	1
Private and Public Sectors Risk-taking	1

Illustration 14 depicts the distribution of PCT applications by type of applicant. According to this chart, the number of PCT applications filed by individuals & universities in Israel is relatively high in comparison to other Western countries. This data strengthens the claim that the number of entrepreneurs in Israel is relatively high.

Illustration 15 shows companies which in the past used to invest randomly in Israeli companies, disregarding the stage of the companies in which they invested. However, today we can see a much more selective and particular investments in accordance with the companies' life circle.

Illustration 16 shows that the capital that was raised in Israel in 2013 was higher than the capital that was raised in the same year in China (!) and only 800 million less than Europe. As stated by Steve Ballmer, Microsoft's, CEO in 2012: "When it comes to innovation and creativity, Israel is second only to the Silicon Valley"

Illustration 17 shows that all the big players invest in Israel with recent additions in 2013

What should the government do?

In order for the high-tech industry to continue leading the Israeli economy, ensuring Israel's edge in global markets and utilizing its human capital, the government must formulate a comprehensive national plan for developing the technology sector that is based on four main cornerstones:

- Nurturing human capital along the entire production chain, by strengthening the ties between academia and industry.
- Setting up a new, alternate model for venture capital funds and incubators with serious government involvement in this process.
- Providing a safety net for investors and channel institutional investments to high-tech.
- Providing incentives for multinational corporations to set up additional R&D centers in Israel.

Funding is especially important and, as we have seen, its lack thereof is currently hindering further technological innovation. The State should resume the active role it had in this area in the past and in so doing, avail itself of the latest tools corresponding to the new reality. The Government should invest in technology projects and encourage technology ventures using existing means such as the Chief Scientist's office, and new ones, in collaboration with the private sector. It should encourage institutional investors to divert more funds to the technology industry and provide a safety net and other means of minimizing investor risk.

Diverting just one percent of institutional investor funds, estimated at some 1.2 billion NIS, to investments in Israeli high-tech will enable the technology sector to take off once again. Clearly, such investment is not risk-free, but it is surely more rational than investments in Eastern European real estate.

The high-tech industry was, to a large extent, responsible for Israel's economic success in the last few decades and provides Israel its clear edge in global markets.

Therefore the policy-makers should treat it accordingly. It is hoped that Prime Minister Benjamin Netanyahu, Finance Minister Yair Lapid and Economics and Trade Minister Naftali Bennett (a successful, former high-tech entrepreneur), together with the Government as a whole, will realize the benefits of injecting new momentum into Israel's high-tech industry. In conclusion, it seems the circumstances that led to Israel's thriving high-tech industry are changing and in order to avoid dangerous stagnation, new blood must be injected into the system. As noted, some parts of the foundations of the technology sector are still solid – entrepreneurial abilities, academic excellence, relatively high national investments in R&D, creativity and the ability to adapt to changing conditions of a dynamic, competitive global market.

However, some factors that facilitated industry growth are gradually disappearing and increased competition from Asian countries is generating a dangerous gap. This is Israel's decisive moment. It must preserve its high-tech industry's extraordinary achievements and help it advance to the next stage.

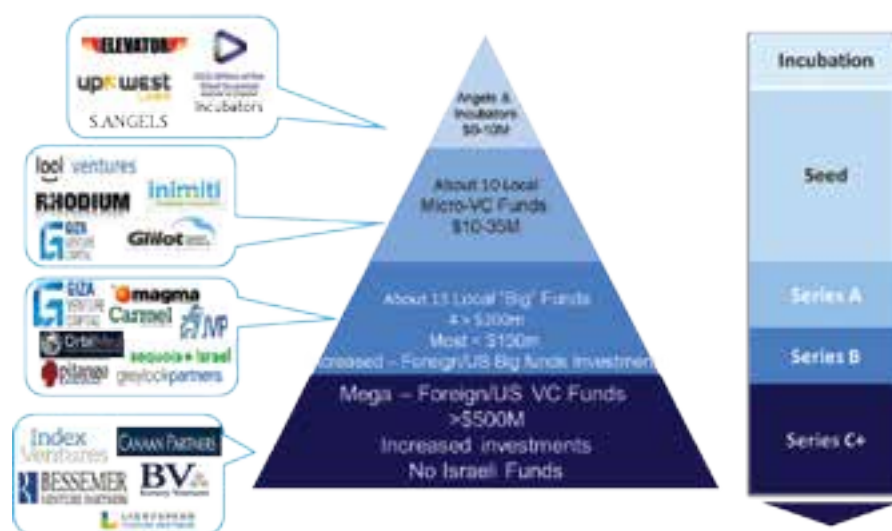


Illustration 15

(source: Israel - IVC Research Center)

The Drug and Life Science Industry

No other industry is as closely intertwined with intellectual property as is the drug industry.

R&D-based drug companies are completely dependent on adequate protection of intellectual property rights. The time and expenses involved in the innovative drug industry's R&D process are especially large. The average time required for drug R&D, including licensing, ranges from approximately 12-15 years, and its estimated cost is approximately \$890 million. Moreover, for every 5,000 molecules filtered, on average only around five undergo clinical trials, and only one becomes a drug approved for the treatment of patients. Effectively, less than 20 percent of drugs which reach the human clinical trial stage eventually obtain regulatory approval.

In addition, on average, only three out of 10 prescription drugs available for treatment generate income equal to or beyond the average R&D costs. Findings indicate that absent patent protection, approximately 65 percent of the drugs currently on the market would not have even made it to the development stage. Conversely, the business model of generic drug companies is based on the expiration of patents and the possibility of developing similar or identical drugs.

Globally, the ethical drug companies (which manufacture original drugs) and the generic companies are in an intense political, legal and economic battle over patent regulation. The ethical drug companies are intent on extending patents for as long as possible, while the generic companies are trying to shorten them.

Since the cost of developing a generic drug is relatively inexpensive, these drugs are sold cheaply, for around 30-50 percent of the price of the original drug. After two years of operations, the generic drugs typically command approximately 70 percent of the market for a particular drug.

The drug battle intensifies with the approach of what is defined as the original drug companies' moment of truth – the feared patent expiration date. A number of patents protecting key original drugs will be expiring, and these original drug companies lack sufficient drugs in the R&D pipeline for new patents. Experts estimate that many drug companies will seek business collaborations or mergers to ensure their continued survival in a market where there are a growing number of companies manufacturing generic alternatives that sell for significantly cheaper prices.

It appears that the traditional business model of the drug companies is changing. From 1985 to 2000 the big companies – which manufacture approximately 70 percent of the world's pharmaceutical drugs – saw their market value soar. Now they are facing tremendous pressure and the forecast is that by 2020 the traditional business model will stop working. The companies will make the inevitable shift from drugs that cater to a wide public to drugs that correspond to the user's genetic profile, and then the drugs will be suited to smaller user groups. The financial significance is that income from every new drug will decline dramatically, and the economic feasibility of developing new drugs will be uncertain.

Given the changes in the industry, drug companies are trying to link up with research companies, universities, labs, clinics, hospitals and even drug distributors in order to identify new trends and technologies and develop effective products for the public.

This process is actually already underway. In Israel we are seeing big international drug companies, such as Roche and Novartis, as well as Israeli companies such as Teva, collaborating on research in drug development with academic researchers while investing in small pharmaceutical and biotechnology companies.

The Global Drug Market

The global drug market is estimated to be worth \$800 billion. The largest players in this market are the U.S. (responsible for 50 percent of all existing drugs in the world) and some Western European countries (primarily, Switzerland, Germany and England), Japan and Israel, which is very dominant in the generic drug market (mostly due to Teva Pharmaceuticals).

In principal, each country formulates patent laws independently. However, the TRIPS Agreement established a set of rules that contracting parties must adhere to. These rules are meant to ensure a minimal standard for the protection of intellectual property in general, and specifically patents in the drug market.

4.1 The R&D-based drug industry

Israel has great potential to attract investment in R&D for biomedical products and for conducting clinical trials. Until recently this potential was not sufficiently realized due to a series of legal and regulatory problems relating to the protection of intellectual property rights to drugs and other bureaucratic difficulties.

After Israel joined the OECD, several changes, adjustments and revisions were implemented. These were meant to provide adequate protection of intellectual property rights for drugs corresponding to the standard in OECD member countries. These changes are still in progress and its most important element addresses the patent term extensions – an area where Israel lagged behind the West.

Below we briefly review the current situation in Israel and the changes it will soon make that are meant to improve the protection of intellectual property rights in the drug industry.

4.2 Patent Term Extensions (PTE)

The Patent Term extension in Israel is very complex, cumbersome and time-consuming, and there is a lingering lack of clarity that has yet to be addressed in local legislation. Additionally, the patent extension system in Israel is unbalanced and clearly tends to favor the local generic industry's interests over those of the ethical companies.

The entire matter of PTE surfaced as a result of the February 1998 Patents Law Amendment. The local PTE provisions, appearing in Article B1 of Chapter D to the Patent Law, enables to extend the original protection term of various patents for new drugs and medical devices, subject to compliance of the conditions prescribed in Section 64D of the Patent Law. The PTE system was introduced as a result, among other things, of the growing international pressure on Israel to improve and adjust the level of protection provided for intellectual property rights.

The main reason for allowing PTE periods for various pharmaceutical patents in Israel is the desire to compensate the ethical companies for the lengthy regulatory processes that are needed in order to obtain a marketing authorization for the relevant pharmaceutical product, during which said companies are barred from the commercial use of the patented product. As noted, the actual length of pharmaceutical patents is much shorter than the nominal period prescribed in the Law (20 years). The long time needed to develop a new drug and to obtain a license to market it leads to a situation whereby the ethical drug companies have a relatively short time to market the patent protected drug. Another objective of the local PTE system is balancing the impact of the 'Bolar' Exemption (the permission granted to generic manufacturers to conduct trials during the life of the patent in order to obtain a license to market their generic substitutes upon the expiry of the patent.

The Israeli PTE system is very unique in the sense that it creates a linkage between the eligibility of Israeli patents for PTE / duration of PTEs in Israel and data pertaining to PTEs / SPCs granted for reference patents in 6 other countries called “Recognized Countries”.

The duration of a PTE in Israel is equal to the shortest term of extension granted for a Reference Patent in the Recognized Countries but, in any event, expiry will occur no later than the earliest of:

- 5 years from the expiry date of the original protection term of the patent;
- 14 years from the earliest date on which a marketing authorization for the product was granted in the Recognized Countries;
- The earliest expiry of a PTE/SPC granted for a Reference Patent in the Recognized Countries.

The above calculation is cumbersome and imposes unnecessary bureaucracy on the ethical companies in their effort to obtain a PTE in Israel.

The grant of an extension order in Israel is subject to the fulfillment of the following conditions:

- The patent, the extension of which is being sought in Israel, should claim the active ingredient of the medical preparation (or salts, esters, hydrates or crystalline forms of the active ingredient), or a process for its production or its use or a medical preparation comprising the active ingredient or a process for its preparation or medical equipment that requires licensing; The preparation is registered in the Israeli Drugs Registry (i.e. grant of a marketing authorization for the preparation in Israel).
- The registration of the preparation is the first

registration enabling the use of its active ingredient in Israel for medical purposes.

- No extension order has previously been granted for the basic patent or for the active ingredient of the relevant medical preparation.
- If a marketing authorization for the medical preparation has been granted in the U.S.A., the grant of an extension order in Israel in respect of this preparation would be conditioned on the grant of a PTE for a US reference patent protecting the preparation;
- If a marketing authorization for the medical preparation has been granted in at least one European recognized country, the grant of an extension order in Israel in respect of this preparation would be conditioned on the grant of an SPC for a reference patent protecting the preparation in said recognized country.

The local PTE provisions were amended on January 20, 2014 (in the framework of Amendment No. 11 to the Israeli Patent Law) and the amendment came into force on January 27, 2014. The latest amendment to the Israeli PTE provisions is the result of a bilateral agreement, signed between the Israeli Government and the U.S. Trade Representative on February 18, 2010. This amendment introduces substantial changes to the Israeli PTE system. The following is a non-exhaustive list of some major changes introduced in the framework of Amendment No. 11 to the Israeli Patent Law:

- Reducing the list of 21 Recognized Countries, (Australia, U.S.A., Iceland, Japan, Norway, Switzerland, Austria, Italy, Ireland, Belgium, U.K., Germany, Denmark, The Netherlands, Greece, Luxembourg, Spain, Portugal, Finland, France and Sweden), on the basis of which PTEs in Israel are calculated, to a much shorter list of 6 countries, namely, the U.S.A. and 5 EU countries (France,

- Germany, Italy, Spain and Britain).
- The due date for filing PTE applications in Israel in respect of granted or pending patents (90 days from the date of registration of the relevant preparation in the Israeli Drug Registry) can no longer be extended for any reason whatsoever.
 - Setting official due dates for prosecuting PTE applications.
 - Adding the possibility of filing a PTE application for a pending patent.
 - Setting forth a procedure for examining a PTE application in cases where the required PTE/SPCs in the recognized countries have not yet been granted.

While the aforementioned change in the list of the recognized countries essentially benefits the Innovative pharmaceutical industry, and will prolong in various cases the duration of the PTE in Israel that would have been expected under the previous PTE provisions, some other changes, introduced following a heavy pressure of the local generic industry may adversely affect the duration of PTEs in Israel, and in some cases may even deprive the possibility to obtain a PTE. In this sense, the last-mentioned changes are inconsistent with the aforementioned agreement between the Israeli Government and the USTR and undermine its main purpose which was increasing the protection granted for various IP rights in Israel.

Undoubtedly, improving the protection of intellectual property rights will accelerate the pace at which new drugs are registered in Israel, and will increase competition between various original drugs for the treatment of assorted types of illnesses. It is worth noting that the cost the economy incurs from the import of drugs not registered in Israel is greater than the cost of paying for drugs registered in Israel and that are based on intellectual property rights. In

addition, lack of registration of these drugs in Israel will prevent any possibility of generic competition and price reductions over time.

Regarding clinical studies, no less than 1,000 clinical studies are conducted in Israel annually in the drug area alone. Israeli hospitals' highly developed infrastructure, Israel's heterogeneous population and access to information and collaborations still attract drug companies. Clinical trials inject \$350 million into the country annually, and over the past decade, approximately 1,300 new drugs were approved in Israel.

Israel still attracts large companies and the world perceives it as a center of innovation. Yet, we must not be complacent given that the number of clinical studies conducted in Eastern Europe and Asia is growing at an annual rate of 5-10 percent and countries once seen as leaders in the field are now in decline and fighting to hold on to their share in the market.

In order to ensure that Israel continues to maintain its edge in this field, there must be a reduction of the bureaucratic obstacles that hinder advancement of clinical studies. The world is moving forward, and Israel must not stagnate. If there is no change in this area, we will witness an increasing corporate preference for conducting clinical studies in Eastern Europe and the Far East.

4.3 Counterfeit drugs and counterfeit drug smuggling

Paralleling the bustling activity in the Israeli drug market, there is another feverish market. Any commercial enterprise would aspire to the scale of manufacturing and trade in counterfeit drugs – i.e., non-original drugs, produced in non-pharmaceutical conditions. This phenomenon, it should be said, is not typical of Israel alone and many countries around the world are attempting to combat it, with a varying degree of success.

The extent of pharmaceutical-related crime around the world is steadily increasing, paralleling the growth of the pharmaceutical industry. Pharmaceutical criminals are not small fry, but international organizations involved in manufacturing, stealing and illegally trading medical products. In addition to counterfeiting drugs, the criminals also counterfeit drug packaging, divert drugs from their original destination (for example, to markets where the profit for traders is higher), supply illegal drugs to pharmacies and sell drugs illegally, including via newspaper ads and Internet sites.

There is currently no precise data on the extent of counterfeit drug distribution worldwide, and estimates now range from one percent to more than 10 percent of all drugs sold in developed countries. A more stringent assessment maintains that every fourth drug sold in developed countries could be a counterfeit. Yet another assessment is that around 50-60 percent of drugs in the Third World are counterfeit. The top counterfeiters are China, India, Russia and the United Arab Emirates.

Three years ago, the U.S. Food and Drug Administration estimated that annual sales of counterfeit drugs around the world totaled approximately \$3.5 billion. Another recent U.S. assessment warns that if no real steps are taken to deal with this phenomenon, the total amount could rise within a few years to around \$75 billion annually.

4.4 What is happening in Israel?

Last year, the Institute of Drug Safety, an international organization, published a report ranking Israel tenth in the world in the number of counterfeit drugs found by enforcement agencies. Next to Israel in the report were places such as Russia, China, Uzbekistan, Ukraine, Brazil and Peru. Upon the release of the report, its authors noted that findings included do not necessary reflect the scale of crime in practice. Others estimate that Israel's level of drug counterfeiting ranks eighth in the world.

There are many risks stemming from distribution of counterfeit drugs. It harms the patients being treated with them, leading even to death (according to one assessment, between 500,000 to one million people die each year as a result of taking counterfeit drugs). The phenomenon also severely damages the manufacturers' reputation, sales turnover and trust in them which in turn results in substantial economic harm and loss of market segments.

What is being counterfeited?

The counterfeit items include original preparations, generics (Viagra, Cialis and Levitra, and weight-loss drugs), steroids, anti-cancer products, antibiotics, pills to lower blood pressure, and others. Apparently the lack of appropriate legislation, absurd punishment, lack of law enforcement, parallel imports, the ability to purchase drugs on the Internet and a long and unsupervised supply chain ease things for counterfeiters. This also makes the fight against counterfeit drugs particularly difficult. Beyond that, Israel has some unique circumstances that further ease the situation for counterfeiters, such as its position as a transit point between the East (which counterfeits drugs) and the West (the target market), and its proximity to the Palestinian Authority.

Israeli drug manufacturers estimate that in the past year, over one million counterfeit and stolen drugs were sold in Israel, for a sum total of approximately 120 million NIS. Officials handling the matter, the police and the Ministry of Health and the Ministry of Justice, however, do not have precise data regarding the extent of the phenomenon. At the same time, all the relevant parties stress that the phenomenon indeed exists in Israel. According to public health officials, it is not at all a negligible phenomenon and it must be dealt with using all available means.

Growing pressure from a number of organizations active in this area – the Permanent Forum on International Pharmaceutical Crime [PFIPC], International Medical Products Anti-Counterfeiting Taskforce [IMPACT], under the auspices of the World Health Organization [WHO], and Interpol and drug companies – led in 2007 to the formation of the Ministry of Health Pharmaceutical Crime Fighting Department. This department, which is directly responsible to the Ministry of Health director general, is responsible for combating pharmaceutical crimes. Including in this are thefts and sale of stolen drugs and counterfeit cosmetics, the use of therapeutic drugs and chemical components to produce dangerous drugs, using therapeutic drugs for things other than for which they are licensed, the import of anabolic steroids and even trading and selling counterfeit veterinary drugs.

Yet this department is under-budgeted and lacks adequate regulations. The Knesset Information and Research Center reviewed this matter in a special report, and considered the question: why is the Pharmaceutical Crime Fighting Department's size so small given its great importance. The report states that the Ministry of Finance noted that the most recent Budget Law allocated to the Ministry of Health 140

positions for inspectors (70 positions in the 2011 Budget and 70 additional inspectors in the 2012 Budget). The decision not to allocate the positions needed for the Pharmaceutical Crime Fighting Department was made by the Ministry of Health. The Finance Ministry added that in the last three years, the Ministry of Health made no request at all to discuss the matter in budget talks.

According to the Knesset report, the demand for a larger scale of operations in the Pharmaceutical Crime Fighting Department is shared by everyone active in this area. For example, the Customs Authority's Drug Unit notes that it requests assistance on a daily basis for the head office and at border crossings, but because the Pharmaceutical Crime Fighting Department is very small, it is unable to address these needs. Hence, the Customs Authority is required by the UN's behest to monitor 23 substances that could be used to manufacture drugs, but without consultation with the Pharmaceutical Crime Fighting Department, Customs officials cannot properly identify the substances.

The conclusions section of this report will address the question of what needs to be done to deal with the matter of counterfeit drugs and counterfeit drug smuggling. However, we can say now that without revised budgets and regulatory procedures for the Ministry of Health Pharmaceutical Crime Fighting Department, as well as manpower for the Customs Authority and Police, and increased consumer awareness of the dangers of using counterfeit drugs, it will not be possible to effectively combat these dangerous practices. Additionally, there is a need for legislative changes, stiffer punishments, increased supervision of the supply chain and new technologies for monitoring, supervising, controlling, finding and indentifying counterfeit drugs.

Copyright Protection

A key element in assessing the quality of intellectual property laws is a state's ability to provide and enforce copyright protection in a number of industries – software, music, film, books etc. These industries are essentially the purest form of intellectual property as all the products are the fruit of intellectual activity and by nature are intangible. Given the unbearable ease of illegally copying software, films and music, these industries are especially vulnerable to piracy and hence there is a clear necessity to protect them.

These factors are all considered in assessing the intellectual property regime's enforcement of laws against those who trade in counterfeit goods and brands.

5.1 The software, music and film industry

In the past, Israel was defined as “a one-software country” due to large number of illegal software copies. Today this phenomenon is decreasing to some extent. According to one assessment, the rate of pirated software in Israel is approximately 31 percent (IIPA – International Intellectual Property Alliance 2013 Special 301 Report on Copyright Protection and Enforcement) compared to around 59.9 percent on average worldwide. The Israeli piracy rate is indicative, as mentioned, of a slow decline over the years in software piracy, given that in 2006, the rate was approximately 33 percent (these figures do not factor in people who upgraded their computers and used the software from the old computers or purchased software abroad).

To understand the financial significance of effectively dealing with software piracy, we note that according to BSA – The Software Alliance, a trade association monitoring software copyright issues, reducing the software piracy rate from 33 percent to 23 percent over the course of four years could result in around

\$8 million in new economic activity, create 3,207 new places of work and add \$430 million to the State's tax income.

Regarding the music and film industry, counterfeit CDs and DVDs may be manufactured commercially or independently using free software distributed on the Internet. The impact of these counterfeit goods (i.e., on performers, recording companies and film producers) is harsh, especially given the ease of purchasing and/or producing counterfeit copies.

The Israeli Federation of Records and Cassettes estimates that 60 percent of the local music market is pirated. Estimates maintain that approximately 90 percent of the three million pirate CDs sold annually violate copyrights. The estimated damage to artists and companies is approximately 500 million NIS. Moreover, around 40 percent of the film industry is controlled by pirate sales. This includes smuggling of counterfeit records, illegal showings (public showings in cafes and pubs), Internet downloads and more.

All branches of the industry suffer seriously from the incredible ease of reproducing and marketing pirate films, which should be protected by intellectual property laws. The film piracy rate has for several years been around 40 percent. Israeli cinemas incur around 80 million NIS in direct damages each year.

Other damages are incurred by distributors of DVDs for home use. There are around 1.5 million counterfeit films which make up approximately 40 percent of the DVD distribution market and their value is about 90 million NIS. Consequently, the total damage to the industry amounts to some 170 million NIS annually.

Illegal Internet downloads are very widespread in Israel. Taking into account the Israeli population's high level of Internet use (second in the world ranking after

Canada) helps illustrate how extensive the phenomenon is. However, the law enforcement authorities do hardly anything about this, and there are very limited options for legislative actions against infringements.

5.1.2 The legal framework – problems and limitations

The relevant law covering software, music and film copyright protection is the Copyright Law. This law – which at one time was based on British mandate law from 1911 – was revised extensively and a new law went into effect in May 2008. However in the balance of power between the producer and the consumer, it seems the user still has the upper hand. Furthermore, one of the main complaints about it is that despite the revision, the law hardly acknowledges the technological advances of the past decade, such as the Internet, iPhones and the slew of other mobile devices. It does not, nor does it presume to, provide solutions for contemporary issues, such as a comprehensive and satisfactory solution for file sharing, on-line content stores, interactive television, cellular music, Internet supplier responsibility for copyright infringements, Digital Rights Management (DRM) and technological measures to protect against unauthorized copies.

In software, copyrights provide protection for expression of an original, creative concept developed by a copyright proprietor, usually after substantial investment of resources and time, which includes programming, classifying and writing software code. Modern programs need to be able to communicate with numerous other software and hardware applications. Therefore, the development work becomes increasingly complicated over the years. Using a monopoly to protect the product resulting from the development work is, therefore, a means and important incentive for software development companies to continue their investment.

A very problematic section of the law, from the software industry's perspective, is Section 24, which is meant to enable a software purchaser to make limited adjustments to the software without infringing the copyright. This section permits infringements of copyrights in cases where American and European law do not permit it, in three instances: 1) adjusting the software for a different program or different operating system, and correcting errors; 2) adjusting other software programs or operating systems to work with this software; 3) backups.

The right to change software to adapt it to "other software" or "other operating systems," is not recognized in Europe and in the U.S. The right to decide which operating system a program can run on is in the hands of the software inventor and the permit to adapt a program "to another operating system" entails getting into the software itself (as opposed to studying its operation in order to adapt it to another program that was independently produced). The law permits intervening in circumstances where the actual software has no flaw, and in total contradiction of the owners' intentions regarding the copyright. Intervening this way in a product is not possible when it comes to other works protected by copyright laws, and the software industry is clearly discriminated against in this area. Moreover, the European Union permits copyright infringements only when it is necessary in order to use the software in accordance with the manufacturer's intentions, and pursuant to the copyright proprietor's contractual right to object to this.

As noted, the right to change a program in order to correct is not at all recognized in the U.S. and in Europe the right is recognized with clear restrictions that are not in the law. Regarding the right to adjust other software programs, even though this right is recognized in the world, there are numerous restrictions, among others, that there is no good alternative to intellectual property

infringement. Hence, for example, the European law and the American law clearly specify that intellectual property infringement is limited to situations where the information is not available via other means.

The existing law may also allow mass distribution of information obtained through infringement of the software producer's intellectual property rights. In contrast, the software directive in Europe unequivocally bars distributing products of reverse engineering to others, or the use of products in order to produce a program that is copied for a product that was reverse engineered (except when it involves another program that was produced independently and interfaced). American law uses the same approach to reverse engineering and permits the distribution of the information obtained only for the purpose of interfacing with another program, which was produced independently and interfaced, and with the additional provision that the distribution of the information does not violate other rights.

Other problematic elements include Section 24(a), which allows preparation of backups, without specifically limiting the number of copies and how they may be used. Section 16(2) permits unlimited rental by libraries of copyright-protected computer programs, without the permission of the copyright proprietors, even though rental is not a typical way of using software, which must be installed in order to run it. There is a notable absence in the law of anti-circumvention regulations barring circumvention of technological protection devices developed in recent years for digital files, such as access passwords and codes and digital rights management. This is the case even though Israel is a party to treaties relating to legal protection in these areas.

The law canceled the minimum of 10,000 NIS for compensation without proof of damage for copyright

infringements and now the court may rule compensation without proof of damage for up to 100,000 NIS, but according to Section 56(c), this refers to massive infringements of many works in one group of actions as a single infringement when it determines the compensation. This may encourage mass copyright infringements, because the greater the number of infringing copies a person creates, the compensation he will have to pay for each copy will actually drop.

5.2 The record industry

The copyright laws for the record industry are in the midst of their broadest revision since Israel's establishment. Apart from the copyright law, this revision includes three different pieces of legislation, the main components of which are the creation of a court for royalty issues, exemptions from obtaining permission to make digital recordings for home use, and exemptions to Internet service providers.

This legislation includes far-reaching changes in the copyright for records, from the cancellation of existing protections for foreign records, ending the option of independently collecting royalties from record companies, legally permitting the burning of CDs without permission and pirate music downloads from the Internet (such as file swapping), and exempting Internet service providers of responsibility for copyright infringements.

These proposed changes, both those that have been approved and those that will be approved, if and when that happens, threaten the position of the local record industry and possibly even its very existence. They are liable to transform the last independent cultural industry in Israel into a state-supported industry. This outcome would be seriously damaging to Israeli culture.

Here is a summary of the problems stemming from the existing law (Copyright Law, 5768-2007) and those that may arise from the amendments cited above with regard to the record industry:

1. The legislation removes the legal protection in existence since Israel's establishment for broadcasting and playing foreign records released in Israel at the same time they are released abroad. There are problematic international ramifications in light of the discrimination against foreign record companies in favor of Israeli record companies, as well as discrimination against foreign records versus other foreign works that have this protection. This change will severely impact on the income of the local record industry, which today channels these funds toward the war against pirate music and will result in a sharp cut in the budget for producing new records, thereby hurting Israeli artists and the creation of original Israeli musical works in the future.
2. The existing law lags behind modern legislation, such as that in the U.S. and Europe, which bans circumvention of recently developed technological devices to protect digital music files, such as anti-circumvention and coding and disrupting digital rights management information. This is the case even though Israel is a signatory of treaties on legal protection in these matters, and despite the great advantage in these technologies, given that they enable record companies to provide music consumers a variety of options for using the music that suits their needs, at varying prices and for the period of time they need.
3. Record producers are denied the moral right to be credited on the record as well as the right to prevent distortions of the recordings.
4. These rights that were removed (in foreign records and with regard to being credited) will also be taken away from records produced in the past, and therefore, the anticipated gains of record companies, which in the past invested good money to produce these records based on future possibilities, which will in any case be reduced.
5. The law also stipulates a sweeping exemption for renting records from public libraries and educational institution libraries without the consent of the copyright proprietor, and also without paying any royalties.
6. The law lacks checks and balances for the exemption for Internet service providers that will ensure that copyright proprietors can receive details about violators from the ISPs in order to prevent future infringements of their rights and enable them to obtain an injunction to prevent such infringements.
7. The legal exemption for public performances of records in educational institutions for free and without the need to obtain consent is broad and also covers using the music for non-educational or non-instructional purposes.
8. Record copyright protection still is for the shortest period anywhere in the world (50 years after its creation, as opposed to 70 years after the death of the artist for other works).
9. The law eliminates the minimum compensation without proof of copyright infringement to 10,000 NIS and even deems massive infringement of many works in a group of actions as a single infringement when deciding on the amount of compensation.
10. The criminal prohibition of public showings without consent was eliminated although it had been in existence since the creation of the State and was an important deterrent of knowingly violating copyrights.
11. The law requires a plaintiff who won his case and acquired pirate record copies to pay the defendant for them (less the value of the music) obligating the record company to compensate the pirate defendant who copied and/or traded the pirate records!
12. The law grants to those who purchased infringing copies in good faith the right to keep them.

13. The law permits parallel import of copyright protected works (such as records) to Israel, and even goes so far as to permit such imports even if the record is produced in Israel by someone who does not hold the copyright in Israel. This legislation undermines copyright policy to encourage original works and even contradicts the legal situation in the U.S., England and Europe, where such imports are banned. Parallel imports will spur the growth of the market for pirate copies, which many times are imported mixed together with them. Damage incurred by Israeli record companies will inevitably lead to a reduced supply of records and favor the marketing of "hit" records. Pushed aside will be records that are less profitable and for which there is less demand, which the company has a cultural and social interest in continuing to offer to the public.
14. The law does not adequately protect works from the U.S.: According to the mutual copyright protection agreement between Israel and the U.S. from 1950 Israel must protect works originating in the U.S. for the same period as local works. The new law reduces that period to the duration of the existing period granted them in the U.S. alone.

5.2.2 Copyright and Performers Bill (in the matter of royalties) 2012

1. The copyright bill replaces an earlier version from 2001 and proposes creating a court for royalties which will hear disputes between corporations for the shared management of copyrights for creators and performers (such as the Israeli Federation of Records and Cassettes, ACUM, Eshkolot – the Israeli Artists Society for Performers' Rights Limited, and others) and users regarding the terms of user licenses and fees for them as well as decide disputes between the above organizations and their members, and between the organizations.
2. The second bill contains two far-reaching innovations.

Firstly, the right of all the above organizations to independently collect royalties for a broadcast or public performance of records, as they have been doing for decades will be retracted and transferred to a single organization to be approved by the Minister of Justice for centralized collection. Second, the royalties the user will pay shall be determined by the royalty tariff established by the court and not as a result of open negotiations among the proprietors of the user license. It is further proposed that until the court determines the tariff, collection of any royalties from users will be prohibited. The court will have to approve the tariffs and the other terms of the license, such as duration, permitted usages, the right to grant secondary licenses and others.

3. The proposed arrangements have no parallel in any developed countries, including the U.S. and Europe.
4. The imposition of a joint collection system on all the collection systems will lead to unnecessary and superfluous disputes and internal disagreements.
5. The ban on direct collection of royalties by organizations imposed by the creation of a joint collection agency severely harms their freedom of organization, freedom of occupation and the record companies' basic right of ownership. The law's formulator did not consider other alternatives that achieve an appropriate balance between the various interests and rights. The result is a legislative arrangement that clearly damages basic right for improper reasons and to a greater extent than necessary. This arrangement also de facto nullifies permission the Antitrust Court granted, after a seven-year review, to the Israeli Federation of Records to collect royalties for performances and broadcasts.
6. The creation of a single collection agency will not reduce the number of organizations collecting royalties from users. It will actually subdivide the collective arrangement currently in place. The arrangement will be artificially split into royalties for the use of live music and royalties for using recorded music (which will be collected by the agency to be established).

7. Imposing this serious task on the royalty court and requiring it to formulate royalty tariffs and licensing terms for various types of users (radio broadcasters, television broadcasters, cafes, discotheques, hotels, malls and so on) immediately at its inception, and in the absence of prior experience seems impossible.
8. The Israeli Federation of Records cautions that the inability to formulate royalty tariffs may paralyze the music industry's ability to collect royalties for public performances and broadcasts on its own, and will therefore cause serious damage to the organization's operations. The lengthy court proceedings to approve the royalty tariffs will entail huge and unnecessary legal costs, even though in most cases, no intervention in the open negotiations between the parties is necessary.
9. The bill is being proposed as a temporary regulation for two years. However, it may be cautiously estimated that the royalty court will not manage to formulate a royalty rate within this period (nor within a longer period either). Yet this amount of time is sufficient to dismantle the Israeli Federation of Records' collection system and of other agencies for joint management of music and create chaos in the issuing of music licenses in Israel. The results and impact of such a process are hard to imagine. What was built carefully over many years now hangs in the balance. Extra caution should be used to enable its preservation, for the benefit of the music industry and of users.
10. The new law should therefore be enacted in a way that preserves the right of the Israeli Federation of Records (and of the other associations for the joint management of copyrights that want this) to continue collecting royalties directly for public broadcasts and performances, independently of the proposed association. Second, the collection of royalties for public broadcasts and performances should remain in the hands of the Israeli Federation of Records even without the court's prior approval of royalty tariffs and the remaining license terms.

5.2.3 Duplication Law memorandum (copies for private use) 2004

1. The Ministry of Justice published a memorandum of the Copies for Private Use on 19.10.04. It proposes allowing private duplication of recordings onto digital media (DVDs, CDs, etc.) even without permission from the record companies that hold the copyright to the recordings. As compensation to the artists and record companies, it proposes collecting a new royalty from importers and manufacturers of blank digital recording media.
2. The proposed bill will directly impact on recording companies in Israel and may bring about the collapse of the recording industry, given that it permits downloading files from the Internet without permission. The memorandum also exempts from responsibility for private duplication, but does not formalize the royalties for doing so.
3. This is not a narrow exemption because the "home" market segment is the record industry's primary sales segment. The exemption de facto ignores this market segment and nationalizes the lion's share of records for the benefit of the public at large, even though copyrights are personal intellectual property rights that enjoy legal protection of the Basic Law: Human Dignity and Freedom, Protection of Property.
4. If the memorandum is passed, it will pave the way for any law-abiding citizen to make recordings on digital media of the same quality as the original, without permission or restrictions on the number of copied works by downloading digital files from the Internet using unauthorized file-sharing programs and others such that it will make the purchase of original recordings from a store or legal Internet sites completely redundant.
5. There are various checks and balances abroad, which do not appear in the memorandum, such as a specific prohibition on private recordings by downloading unauthorized digital files from the

Internet. In addition, the exemption for private use is restricted to a recording from an authorized duplication (and not a pirate copy). Lastly, there is detailed anti-circumvention legislation abroad to prevent the illegal circumvention of technological devices and distortion of digital rights management.

6. Without such balances, the proposed exemption does not correlate with Israel's international commitments in the Berne Convention, the TRIPS Agreement, the WIPO Performances and Phonograms (WPPT) Treaty and the WCT!
7. The proposed compensation to the music industry, in royalties to be collected from manufacturers and importers of recording media (CDs, DVDs and others) shall not exceed five percent of the cost to the consumer, and therefore will only cover a minor part of the damages incurred from the non-sale of recordings. The record industry can expect to receive compensation in the ridiculous amount of three agorot for the loss of 70 NIS in income.
8. The memorandum also does not determine how compensation will be divided among the creators, performers and the royalty associations; it leaves this decision to the secondary legislator. Moreover, the royalties should be required for the import and manufacture of recording devices (burners, MP3s, personal computers, DVD players, CDs, and others), given that many home recordings are put on a device's hard drive without a CD.

5.2.4 Electronic Commerce Bill 2008

1. In January 2008, a bill was presented formalizing, among other things, exemptions for Internet Service Providers (ISPs) from copyright infringements and from the obligation to provide the personal information of anonymous surfers who engage in Internet copyright infringements.
2. The record companies believe various parts of this bill need to be changed and clarified:
 - The bill should state that the exemption is for the ISPs only (and not for those responsible for the infringing content), and that the exemption only absolves them of financial responsibility, but does not spare them from an injunction to prevent a recurrence of the infringement.
 - The bill should state that the exempt ISP must institute a policy that allows for serial offenders to be suspended and have their service cut off, in appropriate circumstances, as in the law in the U.S.
 - The bill should state that the supplier may be exempt from responsibility only if he did not damage anti-circumvention devices.
 - The exemptions for ISPs must be restricted to cases where the service provider acted in good faith and was not aware of copyright infringements.
 - It is doubtful whether the memorandum can allow for inclusion in the bill an exemption for service providers that provide search engines. In any case, a service provider seeking an exemption must prove that there was no benefit from the infringement in a place where the provider controlled the operation.
 - The exemption for access service providers should be restricted to temporary storage that is done automatically and not for storage involving a careful selection of options by the service provider, corresponding with a similar requirement in the American law.
 - The exemption for temporary storage providers should be restricted to storage for a third party and not for storage whose transfer the provider initiated. The provider should not be exempted from responsibility in places where it allows users to circumvent and/or evade the preconditions for access to the material.
 - There should be changes in the procedures directing a service provider "to remove the information" about which a copyright proprietor submitted a complaint, if the provider wishes to benefit from an exemption for responsibility for a copyright infringement.

3. The option enabling service providers on the Internet to disclose to copyright proprietors the details of anonymous violators who infringe on copyrights in order to enable the latter to sue them requires adjustments in these areas:

- The demand to obtain a judicial order as a precondition for disclosing the violators' personal information goes too far. The disclosure of a user's name and details should be voluntary, in order to enable a proper legal process in which the extent of his responsibility is determined. A similar process is now being proposed in the context of disclosing on the Internet personal details of someone suspected of violating slander laws.
- There is no justification for restricting the obligation to disclose the offender's details, other than in the place where his contact is "found on the supplier's server." It should be possible to disclose details of offenders in any instance of improper transfer on the Internet, including as part of access services, storage, and search and host services.

5.2.5 The film industry

In the film industry as well, the relevant law is the copyright law.

Before the enactment of the new Copyright Law, there were a number of revisions like Amendment No. 8 (5763). This stiffened the punishment for producers of unauthorized copies ("one who makes an infringing copy of a work for commercial use" as the clause states) from a misdemeanor to a crime. The maximum punishment was lengthened to five years plus a heavy fine. The same applied to someone "who imports to Israel an infringing duplication of a work for commercial purposes." Punishment was also stiffened to include someone who "possesses an infringing copy of a work for commercial use," which is a misdemeanor and subject to punishment of up to three years in jail and a fine.

However, this is insufficient. Currently, even with these amendments and stiffer punishment, most of the offenses in this area are deemed misdemeanors and not crimes. Therefore and because according to the criminal code, the police have broad discretion not to investigate offenses that are not a crime, often cases of gossip and sale of counterfeit films are closed "due to lack of public interest."

Even the new legislation is problematic in certain respects for the film industry. For example, when it comes to the punitive side, Section 63 and 64 more or less correspond to the revisions to the law noted above, and therefore harsher punishments should not be expected. Moreover, the law also does not give any weight to the Internet and the huge damages Internet transfers cause to copyright proprietors.

5.3 International copyright treaties

Most countries around the world protect copyrights via a series of laws passed in the wake of international treaties and agreements they became parties to. Israel is also a party to such agreements and treaties and we will list the major ones, primarily those relating to the rights to recordings:

The Berne Convention for the Protection of Literary and Artistic Works

This convention was first signed in 1886 and is the primary protector of literary and artistic works and guarantees them certain rights. It obligates signatories to provide equal protection and without discrimination (or national treatment, meaning the treatment accorded by the domestic law of the Contracting State in which protection is claimed) for works by foreign and local residents. Over 140 countries are party to the Berne Convention, which is administered by the World Intellectual Property Organization (WIPO), a UN agency based in Berne, Switzerland. The text of the treaty and the contracting parties are available on the WIPO Internet site.

The Israel-U.S. Bilateral agreement

In 1950 Israel and the U.S. signed a bilateral agreement for the reciprocal protection of copyrights in the two countries. This agreement stipulates that Israel is required to protect within its territory the copyright for works first released in the U.S. in the same way it protects works that were first released in Israel. The agreement states that protection provided in Israel will be for recordings that were first distributed in the U.S. Similarly, the bilateral agreement entrenches protection in the U.S. for works that were first distributed in Israel (apart from certain exceptions).

Geneva Phonograms Convention – In 1971, the Convention for the Protection of Producers of Phonograms Against Unauthorized Duplication of Their Phonograms, better known as the Geneva Phonograms Convention was adopted in Geneva. The goal was to combat pirate duplication of any musical recordings and their import to Israel. The convention protects phonogram producers who are citizens or residents of contracting states to the convention from unauthorized duplication of sound recordings and from the unauthorized import and distribution of such duplications. 61 countries are signatories of this convention.

Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations – This treaty was signed in Rome in 1961 and is known as the Rome Convention. It assures international protection for performers, producers and broadcasting organizations of phonograms. Record producers are protected in contracting states from pirate duplication of records. The convention also makes arrangements for paying royalties for a public performance and broadcast with several permitted exceptions. Over 60 countries are contracting parties. The Rome Convention was incorporated in the regulations of the Copyright Law in Israel only at the end of 2002, but did not dramatically change the legal situation.

The Universal Copyright Convention (UCC) – This convention was signed in 1952 and protects authors and copyright proprietors from unauthorized duplications, public performances and broadcasts, and other actions, and these too are pursuant to several permitted exceptions.

TRIPS (Trade Related Aspects of Intellectual Property)

– As noted in the preceding section, this agreement is part of a series of world trade agreements. After Israel became a contracting party of this agreement, intellectual property laws in Israel were revised in 1999, among them the copyright laws, in areas relating to enforcement. It authorizes the Israel Customs Authority to delay the release of imported goods suspected of copyright infringements in order to enable the court to discuss its fate prior to its distribution to the market. Another amendment incorporated into the law following the TRIPS Agreement permits the court to order the destruction of goods whose production entailed copyright infringements. The Chamber of Commerce estimates damages from the counterfeit industry at 1.5 billion NIS annually and this estimate relates to textiles and clothes, alcoholic drinks and video cassettes. Despite the different assessments of the extent of the phenomenon, undoubtedly the blow to the State's income (corporate tax and VAT) as a result of intellectual property infringements is estimated to be hundreds of millions of shekels annually.

Recommendations and Conclusions

Israel's intellectual property protection regime has, in recent years, undergone changes and improvements, but it is still lacking. In order to address the phenomenon with due level of seriousness, a progressive and technology oriented state such as Israel must adopt a new approach that will place the issue atop the national list of priorities and allocate resources to address the different intellectual property infringements.

What is to be done?

In the legal sphere

Enforcement of intellectual property laws is different from other disciplines heard in court, because it requires in-depth review of scientific and technological subjects as well as extensive judicial experience. The legal system must be in a situation where the State Prosecutor, the plaintiffs' attorneys and the judges themselves are people who "live" the issue of intellectual property and follow a clear policy whose aim is to enhance the protection of intellectual property. It is important for this policy to be jointly defined and shaped by the Ministry of Justice and the judicial system. Judges' awareness of the importance of this issue can be increased with the aid of regular supplementary programs and the training and appointment of judges to deal specifically with intellectual property.

Likewise, steps should be taken to strengthen the system that provides intellectual property rights (especially patents, trademarks and designs) and thereby effectively encourage the public to use legal tools to protect its intellectual property.

At the same time, there should be efforts in the legislative plane to ensure improvement and updating of intellectual property laws with the participation of copyright proprietors. This effort should also address in this context the problematic laws mentioned in this report. There should also be an attempt to speed up procedures in investigations and issue criminal indictments against

copyright infringers using the Money Laundering Law.

Strengthening the enforcement regime

Simultaneously, there is a need for strengthening enforcement by expanding and empowering the organizations that deal with the matter and by providing customized tools to the law enforcement agencies. This matter is vital to the success of any reform. There should also be a focus on expanding criminal sanctions and their implementation in order to create an appropriate deterrent effect. In Japan and the U.S., the law enforcement systems were greatly shored up as was collaboration between countries, a process which has proved itself very well.

Handling of intellectual property begins beyond the borders of the state. In order to prevent imports of counterfeit goods, there should be collaboration mechanisms with other countries, to promote enactment of trade agreements that directly address the issue of intellectual property. The State should become a contracting party to international conventions and collaborations and work to create an extra-territorial enforcement system and cooperate on enforcement and customs issues.

Clearly, without an aggressive and efficient enforcement system, no improvements in the current situation will be possible. Therefore the following steps are recommended:

1. Subordinating all policemen in the districts to the national intellectual property unit and treating the unit as one combating economic crime.
2. Allocating additional positions to the national intellectual property unit.
3. Hastening the issuing of indictments, implementing the Arrest Law and creating a professional framework within the Police of prosecutors to deal with indictments relating to the matter and handle intellectual property cases.
4. Increasing cooperation among municipal police stations on enforcement and as part of this, increasing

the frequency of raids on channels of counterfeit goods.

5. Collaborating with police forces in other countries.
6. Allocating manpower to deal with the transfer of counterfeit goods from the Palestinian Authority areas.
7. Setting up a collaborative mechanism with all enforcement agencies (Income Tax Authority, VAT, the Ministry of Economics and Trade and copyright proprietors)
8. Allocating resources as part of the State budget and funding for at least 75 positions in the special police unit.
9. Instructing the Income Tax Authority and VAT to increase preventive efforts and enforcement of prohibitions against the import of counterfeit goods via the ports using existing means and by the addition of new ones.
10. Using Ministry of Industry, Trade and Employment inspectors to check businesses and markets and exercise their authorities, including confiscating goods and imposing fines.
11. Integrating the Tax Authority in the overall activity and reviewing the issue as part of income tax audits of businesses known to be involved in producing, marketing and selling counterfeit goods in Israel.
12. Regulating the phenomenon of photocopying and duplicating books in the possession of educational institutions, which today are deemed a copyright infringement, and payment of royalties for using them.

Learn from worldwide experience

Violating intellectual property rights is no different from stealing any other kind of property. The fact that this does not involve the actual physical taking of an object but the production of a counterfeit product or a copy or a software download does not detract from the severity of the misdeed. Sometimes extensive information campaigns are necessary, such as the

one undertaken by the Business Software Alliance (BSA) in order to convey a clear message to the public regarding the serious nature of the misdeeds. Criminal sanctions should be broad and enable trying anyone who is part of the chain of infringements, from the importer and storage people to the distributors and in extreme cases, the users (whether it is companies or individual people). Intellectual property infringements are easy to commit, and sometimes even a tempting possibility. Without a strong and determined criminal enforcement system backed by a civil system that guarantees a golden path to compensation for those affected, it will not be possible to combat this problem. England provides a good example for enhancing enforcement. After adopting the European Directive in 2004, it set up National IP Crime Strategy Committee (2004), headed by the English Patent Office, a committee tasked with addressing criminal cases involving intellectual property infringements. The committee's work led to the conclusion that in order to combat counterfeit and pirate copies, it is extremely important to set up an intelligence arm that will coordinate the information coming in from the different law enforcement agencies overseeing import methods, manufacturing, transport and storage of counterfeit intellectual property goods. Hence the Tellpat Intelligence Database was set up under the auspices of the British Patent Office, which oversees all information the authorities have on intellectual property infringements. Notably, the British committee, like its counterparts in the U.S. and Japan, also publishes an annual report describing the achievements relating to enforcement in England during the preceding year.

Education and information

We should learn from the experience of the U.S. and Japan. These countries tried to encourage the creation of intellectual property in academic institutions and national research institutes by providing incentives, sometimes even with government subsidies, and

increasing collaboration among the research bodies themselves. At the same time, they launched an educational program, distributed information, and increased awareness of the importance of creating and protecting intellectual property. It should be noted that these governments also attributed great importance to collaboration with local industry, and encouraged it to be part of educational programs and the war against infringements.

Therefore it would be wise to mobilize a government information program to increase the public's awareness of the issue of copyright protection in Israel and the necessity of avoiding cooperating with illegal activities. Additionally, the government should work to include classes on intellectual property and wise consumerism in school curricula and to increase awareness of this issue among the teaching staffs.

Balancing short- and long-term needs

The U.S., Japan and European Union countries are contending, as are many countries around the world, with limited resources in the public sector. However, this budgetary shortfall is not pushing these countries to favor short-term goals, such as expropriation of intellectual property rights and supplying equipment and information to the public for a reduced price. These countries understood the importance of, and implemented policies with a balance between innovation and access.

Coordinating government activities

Until there is a decision to set up a central body to be responsible for promoting the issue of intellectual property protection in Israel, the matter must remain the province of various government ministries. Therefore, during the first stage, it is advisable that the prime minister should act immediately to form a ministerial committee headed by the Minister of Justice. This will

be a committee to prepare an operating plan and guide the various government offices in order to streamline and focus the advancement of these issues. To do so, the committee can look at reforms already instituted in other places around the world.

Inappropriate leveraging of intellectual property assets

The financial losses due to the improper handling of intellectual property do not simply end in the area of counterfeits and duplications, but also extend to the lack of sufficient leverage for intellectual property owned by the state. The State Comptroller already noted shortcomings in the work of the university technology transfer companies. The Finance Ministry's accountant general has already warned that the State is not doing enough to promote the intellectual property found in government hospitals. An internal report by the defense establishment (the Tishler Committee) determined that the State is not doing enough to leverage the intellectual property being created within the walls of Israel Defense Authority.

Summary

Israel took upon itself many international commitments in the realm of intellectual property protection (international treaties, trade agreements, adapting OECD standards). It is in the process of constant improvement. However, in certain areas, such as counterfeit drugs, goods and brand name items, as well as in all matters relating to international standards regarding patents for drugs and in the life science industry, more work is needed in order to “fall into line” with the world’s advanced countries.

There is much damage from intellectual property infringements – lost sales for industry and businesses, lost taxes for the state, blows to consumers, negative incentive for development and innovation, impaired health (due to counterfeit drugs, for example), damage to the normal economic fabric of the country, the development of organized crime and negative employment impacts. In addition, Israel is missing the business potential contained in the leveraging of intellectual property found inside the walls of academia, government hospitals and the defense industry.

In other words, in order for Israel to maintain its status as a leader in the technology and business fields, it must be extremely careful to protect intellectual property rights. Since its economy is party to a network of foreign trade agreements, it cannot permit such damage to intellectual property rights. The Israeli Government must be proactive and take vigorous steps

that will fundamentally change the public’s attitude and the official view of intellectual property products. Such action will contribute to Israel’s economy and to the country’s international standing.

In addition, Israel must work to help the high-tech industry, which lately has been suffering from a number of weaknesses. Most of the problem is due to the financial issue and in this regard it is advisable that the Government work to encourage investors, and primarily institutional investors, to invest in Israel’s high-tech industry, by spreading a safety net and providing investment incentives. At the same time, the Government should act directly by setting up a public venture capital fund, similar to the original Yozma fund, which will provide capital for promising startups in their early stages. The combination of direct investment by the Government and the creation of a supportive investment environment will empower the technology sector to continue as the Israeli economy’s flagship.

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