

MAJOR JEWISH CONTRIBUTIONS TO SOCIETY

- Israel is the 100th smallest country with less than 1/1000 of the world's population.
- While small in size, Israel has contributed to the technology that the world takes for granted every day, and, has achieved major status on several business and economic fronts without the historical benefit of income from oil enjoyed by other countries in the region.
- Those who would boycott Israeli companies and products or support those who pursue the destruction of Israel, should consider what their lives would be like without the benefits of the inventions and contributions of Israel to their daily existence.
- All of the achievements listed below were accomplished while engaged in regular wars with an implacable enemy that seeks its destruction, and an economy continuously under strain by having to spend more per capita on its own protection than any other country on earth.

I. BUSINESS

- Israel's \$100 billion economy is larger than all of its immediate neighbors combined.
- Israel has the highest ratio of university degrees to the population in the world.
- Twenty-four per cent of Israel's workforce holds university degrees, ranking third in the industrialized world, after the United States and Holland and 12 per cent hold advanced degrees.
- Israel leads the world in the number of scientists and technicians in the workforce, with 145 per 10,000, as opposed to 85 in the U. S., over 70 in Japan, and less than 60 in Germany. With over 25% of its work force employed in technical professions. Israel places first in this category as well.
- Israel produces more scientific papers per capita than any other nation by a large margin - 109 per 10,000 people -- as well as one of the highest per capita rates of patents filed.
- In proportion to its population, Israel has the largest number of start-up companies in the world.
- In absolute Israel has the largest number of start-up companies than any other country in the world, except the US ! (3,500 companies mostly in hi-tech).
- With more than 3,000 high-tech companies and start-ups, Israel has the highest concentration of hi-tech companies in the world -- apart from the Silicon Valley, US
- On a per capita basis, Israel has the largest number of biotech start-ups.
- Israel has the third highest rate of entrepreneurship -- and the highest rate among women and among people over 55 - in the world.
- Israel is ranked #2 in the world for venture capital funds right behind the U.S.
- Outside the United States and Canada , Israel has the largest number of NASDAQ listed companies.
- Israel has the world's second highest per capita of new books.

- Israel has the highest average living standards in the Middle East .
 - Israel has the highest percentage in the world of home computers per capita.
 - The per capita income in Israel in 2000 was over \$17,500, exceeding that of the UK .
 - Israel has produced 10 Nobel prize winners
 - Intel Israel has a mega year. Despite the global economic slowdown, exports by Intel Israel more than doubled to \$4.6 billion in 2012 from \$2.2 billion in 2011 and now accounts for a tenth of Israel's total industrial exports. The number of full-time Intel employees grew by 10% to 8,500 and indirect employees to 25,500.
 - Muslims sign up for HU on-line course. Around 40,000 students have signed up for the 9-week on-line course“Synapses, Neurons and Brains” run by the Hebrew University of Jerusalem. Participants come from Lebanon, Iran, Saudi Arabia, Malaysia, Pakistan, Morocco and Algeria as well as the USA, Europe
 - Ten of the best. Fast Company magazine lists the ten most innovative Israeli companies, which includes SodaStream as the 23rd most innovative company in the world.
- POLITICAL
- Israel is the only liberal democracy in the Middle East .
 - When Golda Meir was elected Prime Minister of Israel in 1969, she became the world's second elected female leader in modern times.
 - More Israeli women lawmakers than in the USA and UK. The 19th Israeli Parliament will have a record number of women lawmakers in Israel’s history. Women now comprise 23 per cent of the Knesset – a higher percentage than in the US Congress (18 per cent) and the UK House of Commons (22%).

II. TECHNOLOGY

- The cell phone was developed in Israel by Motorola, which has its largest development center in Israel.
- Voice mail technology was developed in Israel.
- The eyes have it. (Thanks to NoCamels.com) The new Samsung S4 will include eye-tracking technology from Israel’s Umove. It will allow the smartphone user to scroll through text on the screen simply by gazing down. The S4 launched on 14 March in New York. Watch this space.
- Voice recognition that doesn’t need your voice. Israeli startup VocalZoom has developed an optoelectronic microphone that is able to extract a person’s voice from almost all surrounding noise – including other people’s voices. Its optical microphone “reads lips” by sensing vibrations on the face of the person speaking.
- According to industry officials, Israel designed the airline industry's most impenetrable flight security. US officials now look (finally) to Israel for advice on how to handle airborne security threats.

- GridON makes the Keeper, a three-phase fault current limiter developed at Bar-Ilan University. The device, which blocks current surges and limits the current for as long as required to clear the fault, won an Innovation Award from General Electric's Ecomagination Challenge and is of interest to major utilities companies around the world.
- MobileEye combines a tiny digital camera with sophisticated algorithms to help drivers navigate more safely. The steering system-linked device sounds an alert when a driver is about to change lanes inadvertently, warns of an impending forward collision and detects pedestrians. MobileEye has deals with GM, BMW and Volvo, among others.
- Cubital's solid rapid prototyping machines craft 3D models of engineering parts directly from designs on a computer screen. They're used in the automotive, aerospace, consumer products and medical industries, as well as engineering firms and academic and research institutions.
- Rav Bariach introduced the steel security door that has become Israel's standard. Its geometric lock, whose cylinders extend from different points into the doorframe, is incorporated into doors selling on five continents.
- 3G Solar pioneered a low-cost alternative to silicon that generates significantly more electricity than leading silicon-based PV solar modules at a lower cost per kilowatt hour.
- NDS VideoGuard technology is the pay-TV industry's advanced suite of conditional access (CA) solutions. It protects branded service from piracy and ensures that consumers will have the choice and flexibility they demand in broadcast and on-demand content.
- PrimeSense revolutionizes interaction with digital devices by allowing them to "see" in three dimensions and transfer control from remote controls and joysticks to hands and body. It is the leading business provider of low-cost, high-performance 3D machine vision technologies for the consumer market.
- Hewlett Packard (HP)'s Indigo digital printing presses for general commercial printing, direct mail, photos and photobooks, publications, labels, business cards, flexible packaging and folding cartons print without films and plates, allowing for personalized short runs and changing text and images without stopping the press.
- Like-A-Fish unique air supply systems extract air from water, freeing leisure and professional scuba divers, as well as submarines and underwater habitats, from air tanks.
- AFC (Active Flow Control) was developed at Tel Aviv University as an intelligent gas-air mixing system to replace all existing mixing technologies.
- The Space Imagery Intelligence (IMINT) unit of Elbit Systems makes a "space camera," a compact, lightweight electro-optic observation system for government, commercial and scientific applications.
- Decell Technologies is a global leader in providing real-time road traffic information based on monitoring the location and movement of phones and GPS devices. Swift-i Traffic, Decell's premium product, is incorporated in leading navigation systems, fleet management services, mapping operations and media channels in several countries.

- The superconducting fault current limiter (FCL), designed for limiting short currents, comes out of a \$2 million project developed over two years by RICOR Cryogenics and Vacuum Systems with the Institute of Superconductivity at Bar-Ilan University.
- SolarEdge makes a module that optimizes every link in the solar PV chain, maximizing energy production while monitoring constantly to detect faults and prevent theft.
- Samsung to open Israeli innovation and strategy center. Samsung's new center in Ramat Gan will focus on Israeli startup companies, Israeli research academia and venture capital funds investing in start-ups. The new center will be part of Global Samsung, through which the company will expand its activity in Israel.
- Projecting a good image. Israel's Valens makes the chips for HDBaseT technology, which projects High Definition multimedia over a single cable, and has now enabled the popular display port. More companies are adopting this technology, which means the future prospects for Valens look very exciting.
- You've got to Moovit. Israel's Moovit application for public transport information is now available in beta in the UK. Already operating in the US, Canada, and Western Europe, Moovit is the first public transport application to harness the power of the crowd, using real-time user-generated information to improve public transport trip planning and navigation.
- A quality camera for your smartphone. (Thanks to Atid-EDI) Israel's Corephotonics develops computational cameras and tiny electro-mechanical engines to improve focusing capabilities. Corephotonics have raised \$5.2 million to put the power of still cameras into smartphones.
- The worldwide leader in speech analytics. For the fourth year in a row, Israeli hi-tech company NICE has been ranked as the global market leader in Speech Analytics by DMG Consulting. NICE holds a 28.3 percent market share and has the largest number of customers. It was also topped the product satisfaction scores.
- Building a virtual cable TV service for Singapore. (Thanks to EDI) Singapore-based MediaCorp has hired Israeli video startup Tvinci to build a new streaming video service called Toggle that will provide live and on-demand access to streaming video content. Toggle will have Video On Demand (VOD) content, plus a dozen channels of live TV available for streaming to customers' connected devices instead of their TVs.
- Apple opens Ra'anana development center. The new Apple development center in the Ra'anana Industrial Zone will be the company's third in Israel after it opened a development center in Haifa last year and acquired flash memory developer Anobit in Herzliya. Most new staff were previously laid off in TI's global closures.
- Waze is the best mobile app in the world. Israel's mobile navigation and traffic community application, Waze, won the "Best Overall Mobile App" prize at the 18th Annual Global Mobile awards at the Mobile World Congress in Barcelona.
- Smartphones for everyone. Jerusalem based UIU has developed a system that encourages individuals without smartphones to join the technological revolution. Even those with visual impairment can use the large fonts and security features. But did the Times of Israel really have to label people aged 55+ as "elderly"?

- Your smartphone can have Everything. If you search for anything on a smartphone running the new Firefox operating system, it will fire up the software from Israeli start-up Everything.me. Then things really happen as it loads applications dynamically to show you everything you might want, in connection with your search.
- Pump your photos up to the Cloud. Israel's Pumpic is for those who frequently want to share large numbers or high quality photos with their friends and colleagues. Users can send up to 10,000 images - each up to 100 MB in size - instantaneously. Pumpic has just raised \$700,000 in its first round of financing.
- Fixing mobile phones wirelessly. Two Israeli companies Cellebrite and CommuniTake are working together to establish a service that can diagnose and repair smartphones whilst still in the hands of the customer.

III. COMPUTING-COMPUTER SOFTWARE

- Most of the Windows NT and XP operating systems were developed by Microsoft - Israel.
- The Pentium MMX Chip technology was designed in Israel at Intel.
- Both the Pentium - 4 microprocessor and the Centrino processor were entirely designed, developed and produced in Israel.
- Both Microsoft and Cisco built their only R&D facilities outside the US in Israel.
- The technology for the AOL Instant Messenger ICQ was developed in 1996 by four young Israelites.
- USB flash drive - a flash memory data storage device integrated with a USB interface. The Israeli company M-Systems (in partnership with IBM) developed and manufactured the first USB flash drives available in North America
- Quicktionary Electronic dictionary – a tiny pen-sized scanner which is able to scan words or phrases and immediately translate them into other languages, or keep them in memory in order to transfer them to the PC. Developed by the Israeli company Wizcom Technologies Ltd.
- Laser Keyboard - virtual keyboard is projected onto a wall or table top and allows to type handheld computers and cell phones. Developed simultaneously by the Israeli company Lumio and Silicon Valley startup company Canesta The company subsequently licensed the technology to Celluon of Korea
- Israeli-developed designer eyeglasses provide mobile phone and iPod users a personalized, high-tech video display. Lumus-Optical's lightweight and fashionable video eyeglasses feature a large transparent screen floating in front of the viewer's face that projects their choice of movie, TV show, or video game.
- Turbulence, the world's first hyper-narrative, interactive movie, is also the name of the company developed by Prof. Nitzan Ben-Shaul of Tel Aviv University. The technology allows the viewer to choose the direction of the film's plot by pressing buttons on the PC, Mac or iPad at various moments in the action.

- BriefCam video-synopsis technology lets viewers rapidly review and index original full-length video footage by concurrently showing multiple objects and activities that actually occurred at different times. This technology drastically cuts the time and manpower involved in event tracking, forensics and evidence discovery.
- A search engine for equations. The Israeli start-up Eqsquest has created what is believed to be the first semantic search engine designed specifically for scientific and mathematical equations. Symbolab allows users to search for equations using both numbers, symbols and/or text. QED!
- Adi Shamir is co-inventor of Differential cryptanalysis. Algorithms include Shamir's Secret Sharing. Lempel–Ziv–Welch algorithm - a universal lossless data compression algorithm created by Abraham Lempel and Jacob Ziv of the Technion institute together with the American Information theorist Terry Welch.
- Babylon - a single-click computer translation, dictionary and information source utility program developed by Amnon Ovadia.
- ICQ - an Instant Messaging software developed initially in 1996 by the Israeli company Mirabilis.

IV. THEORETICAL COMPUTER SCIENCE

- Michael O. Rabin introduced the concept of nondeterministic finite automata
- Amir Pnueli introduced temporal logic into computing science.

V. MEDICINE

- Israeli scientists developed the first fully computerized, no-radiation, diagnostic instrumentation for breast cancer.
- A gel to repair massive nerve damage. Tel Aviv University researchers have invented a method for repairing damaged peripheral nerves. A biodegradable implant and a new Guiding Regeneration Gel (GRG) to increase nerve growth and healing can repair a torn or damaged nerve, relieving pain and restoring mobility.
- An Israeli company, Given Imaging, developed the camera pill that can perform a virtual colonoscopy eliminating the need for insertion of a colonoscope, sedation, pain medication or any recovery period.
- BabySense is a non-touch, no-radiation device designed to prevent crib death. Made by HiSense, the device monitors a baby's breathing and movements through the mattress during sleep. An auditory and visual alarm is activated if breathing ceases for more than 20 seconds or if breath rate slows to less than 10 breaths per minute.
- An Israeli company developed a computerized system for ensuring proper administration of medications, thus removing human error from medical treatment. Every year in U. S. hospitals 7,000 patients die from treatment mistakes.

- Researchers in Israel developed a new device that directly helps the heart pump blood, an innovation with the potential to save lives among those with heart failure. The new device is synchronized with the camera helps doctors diagnose a heart's mechanical operations through a sophisticated system of sensors.
- EpiLady, the first electric hair remover (epilator), secured its leading position in the international beauty care market and since 1986 has sold almost 30 million units.
The optical heartbeat monitor developed by Bar-Ilan University's Prof. Ze'ev Zalevsky is a revolutionary medical technology using a fast camera and small laser light source.
- Mazor Robotics' Spine Assist and other surgical robots are transforming spine surgery from freehand procedures to highly accurate, state-of-the-art operations with less need for radiation.
- TACount real-time microbiology enables the detection and counting of harmful microorganisms in a matter of minutes, rather than the conventional method of cell culture that takes several hours to a few days. The technology applies to the fields of drinking and wastewater, pharmaceuticals and food and beverage production.
- Itamar Medical's WatchPAT is an FDA-approved portable diagnostic device for the follow-up treatment of sleep apnea in the patient's own bedroom, rather than at a sleep disorders clinic.
- The EarlySense continuous monitoring solution allows hospital nurses to watch and record patients' heart rate, respiration and movement remotely through a contact-free sensor under the mattress. The system's built-in tools include a wide range of reports on the status of patients, including alerts for falls and bedsores prevention.
- The 3D tethered particle motion system developed by three professors at Bar-Ilan allows for three-dimensional tracking of critical protein-DNA and protein-RNA cell interactions in the body.
- Eshkol-Wachman Movement Notation - a notation system for recording movement on paper that has been used in many fields, including dance, physical therapy, animal behavior and early diagnosis of autism.
- Development of the Copaxone immunomodulator drug for treating multiple sclerosis. It was developed in the Weizmann Institute of Science in Israel by Michael Sela, Ruth Arnon and Deborah Teitelbaum.
- Development of the Interferon proteins by Michel Revel from the Weizmann Institute of Science in Israel.
- A new acne treatment developed in Israel, the Clear Light device, produces a high-intensity, ultraviolet-light-free, narrow-band blue light that causes acne bacteria to self-destruct -- all without damaging surrounding skin or tissue.
- An Israeli doctor developed a groundbreaking innovation: artificial tissue containing gold fibers that rehabilitates damage caused by heart attack. The team led by Dr. Tal Dvir is already working on similar technology to rehabilitate other internal organs
- A cure for genetic deformities. A team including researchers from Israel's Technion has developed an innovative technique that they believe will cure deformities and blindness caused by ectodermal

dysplasia, which affects seven out of every 10,000 babies born in the world. Via in-vitro experiments, damaged cells caused by mutant p63 genes can be greatly improved using a chemical substance called PRIMA-APR246.

- Israeli stem cells slow down blood cancer. Israel's Gamida Cell Ltd. reported success in the Phase III clinical trial of its StemEx treatment for leukemia and lymphoma. Compared to a control group, far more patients receiving StemEx survived 100 days or more following transplantation.
- QCore's pumps go global. (Thanks to Atid-EDI) A new distribution agreement with Hospira of Illinois means that the Sapphire medical infusion pumps developed for ambulances and hospitals by Israel's QCore Medical will soon be available in more than 60 key markets across Europe, Asia and the Americas.
- Patient monitoring across the USA. (Thanks to Atid-EDI) Israel's EarlySense systems will now be distributed to hospitals across the United States. A deal with Welch Allyn means that the innovative "under the mattress" sensors may soon be monitoring the vital signs of millions of Americans.
- Printing your dentures? Compass3D, a leading provider of 3D Digital Solutions has begun offering Stratasys 3D Printing Solutions in Brazil. The Objet Eden 3D Printers from Stratasys can be used in conjunction with dental, orthodontics and guided implant products.
- A way to treat aggressive cancers. Current medication for breast cancer targets receptors in the tumors. But one in six tumors have no receptors and are difficult to treat. Now, a team of 11 Weizmann scientists has found a combination of two antibodies that mount a pincer attack on these tumors, causing them to collapse and die.
- Nano-genetic diagnostics. Imagine a microscopic device injected into your body that searches for genetic malfunctions in your cells. If it finds any, it emits a green light to highlight the diagnosis. Weizmann Institute scientists have developed such a device – and are now working on upgrading it to destroy the cancerous cells.
- The secret to a good relationship. Bar-Ilan University's Psychology Professor Ruth Feldman found couples that stay together have higher levels of oxytocin in their blood when they first pair up than couples that ultimately break up. Prof Feldman spent years studying the hormone's role in the mother-child bond.
- Get smart – boost your immune system. Weizmann Institute graduate Prof Jonathan Kipnis has discovered that the T-cells that fight infections also govern intelligence. Mice without T-Cells cannot perform simple tests, but perform normally when their T-Cells are restored. Kipnis got the idea from his Weizmann advisor.
- "Bad behavior" causes flare-ups in the gut. Scientists at Israel's Weizmann Institute have discovered a pseudo-education system in the colon. Newly arrived monocytes are taught how to maintain a healthy balance in the gut by resident immune cells. But if you get an infection or eat the wrong food, the new pupils run wild!
- A way to treat aggressive cancers. Current medication for breast cancer targets receptors in the tumors. But one in six tumors have no receptors and are difficult to treat. Now, a team of 11 Weizmann scientists has found a combination of two antibodies that mount a pincer attack on these tumors, causing them to collapse and die.

- New treatment for psoriasis. Researchers from Ben-Gurion University and Teva have developed an improved version of an experimental medicine for the treatment of the chronic skin disease psoriasis. It inhibits the faulty immune system signal interleukin-17 that triggers the inflammation associated with psoriasis.
- For kids with disabilities, virtual reality isn't just a game. (Thanks to Israel21c) A unique-to-Israel use of virtual reality (VR) has been pioneered at ALEH, Israel's largest network of facilities for children with severe cognitive and physical disabilities. Residents at ALEH's Moriah facility in Gedera go on field trips in simulated environments.
- Restoring mobility to the spine. (Thanks to Israel21c) Israel's Premia Spine offers a unique treatment to those suffering from spinal degeneration. Its artificial titanium joint replaces the posterior spinal column totally. No more pain, full mobility and none of the problems that alternative spinal fusion treatments cause.
- Using cancer to kill cancer. Researchers at Tel Aviv University and Sheba Medical Center have enhanced the immune system using proteins from melanoma (a severe form of skin cancer). T-cells in the immune system are stimulated to produce cytokines, which can fight other cancers in the body.
- Success in trials of stem cells for blood cancer. (Thanks to Atid-EDI) Early trials of NiCord (umbilical cord stem cells) from Israel's Gamida Cell have proved successful in maintaining the health of patients with high-risk hematological malignancies. The treatment was safe and reduced the time to recovery period.
- Colon cancer rates decrease. Israel is fourth among Western countries in the prevalence of colorectal cancer and 15th in the death rate from the tumor. However, the number of cases has declined in the last two decades - by 17 percent in men and 13 percent in women - largely due to early diagnosis and treatment.
- A pacemaker for the arteries. Israel's Enopace Biomedical is developing an endovascular micro-stimulator, which reduces the strain on the heart by expanding the arteries to accept incoming blood. It is implanted by catheter in a 30-minute procedure while the patient is awake and is an alternative to a heart transplant.
- Australia approves Israeli robotic spinal surgery. Israel's Mazor Robotics has obtained approval from Australia's Therapeutic Goods Administration (TGA) for the import and sale of the company's Renaissance navigation robot for spinal surgery.
- The missing LINC to deafness. (Thanks to NoCamels.com) Half of all hearing losses are due to genetic mutations. Tel Aviv University Professor Karen Avraham found that mutations in the LINC cells of the inner ear of an Iraqi family with a history of deafness could lead to new treatments.
- The gene that moves your heart. Researchers at Jerusalem's Hadassah Medical Center have found mutations in the LRRC6 gene cause primary ciliary dyskinesia (PCD). Symptoms are repeated lung infections, sinusitis, frequent ear infections and fertility problems. Early diagnosis may reduce the damage. And in half these cases, the heart grows on the right of the chest instead of the left. The liver, stomach and spleen are also transposed.

- Bone marrow treatment gets boost. In January I mentioned Apocel from Israeli biotech Enlivex, which prevents GVHD rejection of bone marrow transplants. Now, the treatment has received US FDA “orphan” status due to its importance and lack of alternatives for treating the unwanted autoimmune response.
- Immune cells prevent and cause brain degeneration. Weizmann Institute’s Professor Michal Schwartz and her team have discovered that immune cells at the edge of the brain travel an extraordinary route to repair brain trauma. In the elderly, the cells no longer do their function, which could open up new treatments for dementia.
- Immune cells fight or cause liver disease. Sounds familiar? Professor Rifaat Safadi’s team from Hadassah Medical Center in Jerusalem has identified that the normal function of Neuroligin 4 in the immune system is to fight cirrhosis of the liver. But in patients with Hepatitis or alcoholics, the cell changes and attacks the liver.
- Speedy heart monitoring. Sheba Medical Center researchers and Israeli start-up Lev-El Diagnostics of Heart Disease have developed an algorithm that could save lives by quickly identifying patients with heart disease. Patients used to have to wear heart monitors for 24 - 48 hours. Now they are diagnosed in one hour.
- The cutting edge of cell therapy. 18 Israeli companies develop or market cell-based treatment products - an unprecedented large proportion in relation to the country’s population. All of them are attending the Israstem Conference in Ramat Gan starting Apr 22, to discuss stem cells, cell therapy, and regenerative medicine.
- More clues in search for cause of Alzheimer’s. Researchers at Tel Aviv University gave electric stimulation to the brains of rats and found that high-frequency “bursts” produced the same destructive plaques found in the brains of Alzheimer’s patients.
- Success in IBD trials. Israel’s BiolineRX has announced positive results for the Phase IIa clinical trial of BL-7040, an oral treatment for inflammatory bowel disease (IBD). Ulcerative colitis and Crohn's disease affect as many as 1.4 million individuals in the US alone.
- A lifeline on your wrist. Israeli start-up Oxitone has developed a blood-oxygen monitor that can be worn on the wrist by those “at risk” to warn of any sudden deterioration in their condition. Oxitone has been selected for GE Healthcare’s Start-Up Health Academy Entrepreneurship Program – one of only two companies outside of the US to be chosen for their 3-year program that turns fledgling businesses into prime companies.
- The fastest emergency response. (Thanks to NoCamels.com) Israeli start-up NowForce has developed a replacement for expensive emergency call centers. It comprises a distress signal app for the smartphone; an app for the rescue worker (including paging and directing); finally, a dispatch center back-end solution. In the Missouri police department NowForce has cut response times to one sixth of those experienced previously.
- The best vaccine against Hepatitis B Virus. (Thanks to Israel21c) Although nearly all babies are vaccinated against HBV, the virus still kills 1.2 million people every year – mainly immune-suppressed, gluten intolerant and diabetics. Israeli biotech SciGen’s Sci-B-Vac is the only third-generation HBV vaccine, given to almost all Israelis and has reduced HBV deaths in Israel significantly. It will soon be available in most countries.

- US funds Israeli university to research measles virus. Ben-Gurion University of the Negev has received a two-year UN National Institutes of Health grant to investigate why the measles virus persists in its target cells and establishes chronic infection, long after resolution of its acute phase.
- Early cancer detection saves lives. Here is a report on the cancer-screening program conducted at Tel Aviv's Sourasky Medical Center. Its Integrated Cancer Prevention Center program is considered to be unique in the World. In a few hours you get examined for early detection of at least 11 most common cancers.
- A nose test for schizophrenia. A Tel Aviv University team says they can diagnose the psychiatric disease of schizophrenia at an early stage. They take samples of nerve cells from the upper internal part of the nose and test for a specific molecule of micro-RNA that has high levels in schizophrenia patients. Previous tests could only be performed post-mortem on the brain.

VI. BIOTECHNOLOGY

- Nanowire - an conductive wire made of a string of tiny particles of silver, a thousand times thinner than a human hair. developed by Uri Sivan, Erez Braun and Yoav Eichen from the Technion
- World's smallest DNA computing machine system - "the smallest biological computing device" ever constructed, according to Guinness Book of Records, which is composed of enzymes and DNA molecules capable of performing simple mathematical calculations and which uses its input DNA molecule as its sole source of energy it was developed in 2003 in the Weizmann Institute of Science by professor Ehud Shapiro and his team.
- Natural anti-freeze. A team of Israeli, American and Canadian scientists has unraveled the workings of anti-freeze proteins that allow animals, plants, fish and microorganisms to exist in cold climates. The discovery can help improve food and medicine production around the world.

VII. CHEMISTRY

- Discovery of Quasicrystals by Dan Shechtman of the Technion. The discovery led him to receive the Nobel Prize in Chemistry.
- Discovery of the role of protein Ubiquitin by Avram Hershko and Aaron Ciechanover of the Technion Institute (together with the American Jewish biologist Irwin Rose). The discovery led them to receive the Nobel Prize in Chemistry.

VIII. PHYSICS

- Eshkol-Wachman Movement Notation
- Prediction of Quarks by Yuval Ne'eman of Tel Aviv University (together with the American physicist Murray Gell-Mann).
- Discovery of the Aharonov–Bohm effect by Yakir Aharonov and David Bohm
- Formulation of Black holes Entropy by Jacob Bekenstein of the Hebrew University of Jerusalem.

IX. AGRICULTURE

- Refinement of existing Drip Irrigation Systems by introducing a non-clogging plastic emitter. Invented by the Israeli engineer Simcha Blass and his son Yeshayahu in the early 1960s.[49] This method was very successful and subsequently spread to Australia, North America, and South America by the late 1960s.
- Cherry tomatoes - Developed by a group led by Nachum Kedar and Haim Rabinowitch from the Agriculture Faculty of the Hebrew University in Rehovot
- Israeli start-up Veterix has developed an innovative new electronic capsule that sits in the stomach of a cow, sheep, or goat, sending out real-time information on the health of the herd to the farmer via email or cellphone. The e-capsule, which also sends out alerts if animals are distressed, injured, or lost, is now being tested on a herd of cows in the hopes that the device will lead to tastier and healthier meat and milk supplies.
- The Middle East has been growing date palms for centuries. The average tree is about 18-20 feet tall and yields about 38 pounds of dates a year. Israeli date trees are now yielding 400 pounds/year and are short enough to be harvested from the ground or a short ladder.
- Israeli scientists in Israel found that the brackish water drilled from underground desert aquifers hundreds of feet deep could be used to raise warm-water fish. The geothermal water, less than one-tenth as saline as sea water, free of pollutants, and a toasty 98 degrees on average, proves an ideal environment.
- Netafim is a worldwide pioneer in smart drip and micro-irrigation, starting from the idea of Israeli engineer Simcha Blass for releasing water in controlled, slow drips to provide precise crop irrigation. The kibbutz-owned company operates in 112 countries with 13 factories throughout the world.
- Rosetta Green, a 2010 spinoff of the agro-biotechnology division of Rosetta Genomics, develops improved plant traits for the agriculture and biofuel industries, using unique genes called microRNAs.
- Israeli microalgae company sold for \$50 million. UK's Grovepoint Capital has bought Israeli start-up Algatechnologies – manufacturer of AstaPure (astaxanthin) – a powerful antioxidant from the microalgae *Haematococcus pluvialis*. Asta Pure is used as a nutritional supplement and component in cosmetics.
- Israeli agriculture biotech sold for \$35 million. The US giant Monsanto has bought the activity of Israeli crop bioengineering company Rosetta Green Ltd – developer of improved genetic strains of wheat, vegetables and other plants such as cotton, biofuels and algae with medical properties.
- Israel exports 60 million flowers to Europe for Valentine's Day. It may be a day of love and romance for those celebrating Valentine's Day around the world, but it's a day of hard work for Israeli farmers. Israel exported some 60 million roses, orchids, Bonsai trees and other flowers to Europe this Valentine's Day.
- Smart Irrigation. Israeli start-up 22Seeds is raising finance for Greenbox - a revolutionary iPhone-controlled wireless irrigation system. From the comfort of your home you can program your irrigation valves, optimize water usage, import water programs, integrate with weather forecasts and much more.

- No pesticides and no pests. (Thanks to Israel21c) Israeli farmers in the Negev have cut their use of chemical pesticides by about 80%. They use natural predators – bugs that don't harm the crops – to get rid of the pests. Also they allow the land to rest in the July heat to kill off any remaining insects and fungus diseases in the soil.
 - Israeli farmer invents solution for lemon rot. Rafi Koren, a lemon farmer from Moshav Avigdor near Kiryat Malachi has invented a product that prevents the spread of Mal Secco, a fungal disease affecting citrus trees that has been known to kill entire lemon groves.
 - Greener soil. The commercial arm of Israel's Weizmann Institute has developed a system to protect soil and groundwater from contamination from pesticides. Environmentally friendly substances called prophyryns act as catalysts to dissolve toxic substances into harmless ones after they have served their pest-killing purpose.
 - Breaking down pesticides. More about the literally "groundbreaking" technology that Israel's Weizmann Institute has developed. Israeli start-up Catalyst Ag Tech is commercializing the system that introduces eco-friendly catalysts into the soil to break down the dangerous chemicals into inert compounds.
 - Greener roads. Israel's Dimona Silica Industries has developed a road asphalt compound that uses old tires for strength and safety. The new compound, RuBind, recycles many of the 50,000 tires disposed of every year, and is already in use in Israel's Beit She'an Valley.
- ENERGY

X. ROOFTOP SOLAR HOT-WATER SYSTEM

- Super iron battery - A new class of a rechargeable electric battery based on a special kind of iron. More environment friendly because the super-iron eventually rusts. It was developed by Stuart Licht of the University of Massachusetts.
- Energy tower - Purely theoretical alternative electricity generation and water desalination technology in low cost. The Energy towers spray water on hot air at the top of the tower, making the cooled air fall through the tower and drive a turbine at the tower's bottom. The brainchild of the American physicist Phillip Carlson which was expanded by Professor Dan Zaslavsky and Rami Guetta from Israel's Technion
- A unique technology for producing hydrogen in vehicles as an alternative fuel source. It is produced by the Israeli company Engineuity and was invented by Amnon Yogev and Eli Gmaazaon.
- Improvement of previously existing flat plate solar water heaters - A home facility which converts solar energy to thermal energy. Following the energy crisis in the 1970s, The Israeli law requires the installation of solar water heaters in all new homes. It was developed by Zvi Tavor.
- An Israeli company was the first to develop and install a large-scale solar-powered and fully functional electricity generating plant, in southern California 's Mojave desert. Ormat Technologies designs, develops, builds, owns, manufactures and operates geothermal power plants worldwide, supplying clean geothermal power in more than 20 countries.

- Leviathan Energy innovated the Wind Tulip, a cost-effective, silent, vibration-free wind turbine designed as an aesthetic environmental sculpture, producing clean energy at high efficiency from any direction.
- Solaris Synergy innovated an environmentally friendly and economically beneficial way to float solar panels on water instead of taking up valuable land, generating energy while protecting and limiting evaporation from reservoir surfaces.
- ZenithSolar developed a modular, easily scalable high-concentration photovoltaic system (HCPV). The core technology is based on a unique, proprietary optical design to extract the maximum energy with minimal real estate.
- Israel-Cyprus Sign Gas and Oil Explorations Deal. Israeli firms Delek and Anver signed an agreement to acquire a 30 percent stake in exploration rights for gas and oil off Cyprus's southern shore. Commerce Minister Neoclis Sylikiotis told reporters that the signing provided a "new era of Cyprus-Israeli strategic cooperation which includes economic and political dimensions,"
- Saving power in Central America. (Thanks to EDI) Digicel Group, the leading mobile telecom operator in the Caribbean, Central American and Pacific regions, has deployed Smart Energy Solution (SES) from Israel's eVolution Networks. SES reduces energy consumption and CO2 emissions of cellular base stations.
- The best Clean Technology in Munich. The 2012 Munich Cleantech Conference awarded their very first MCC Venture Award to Israel's TIGI. TIGI's Honeycomb solar thermal collectors generate heat for space heating, domestic or industrial uses at extremely high efficiency.
- Catching the wind. Israeli wind sensor company Pentalum Technologies has raised \$5.5 million to expand production of SpiDAR, a cost effective device for remote sensing of wind. The device is 20% of the price of competitors, allowing wind farms to improve electricity production by up to 10% - equal to millions of dollars.

XI. CONSUMER GOODS AND HOUSEHOLD APPLIANCES

- Epilator (originally "Epilady") - an electrical device used to remove hair by mechanically grasping multiple hairs simultaneously and pulling them out. It was developed by Yair Dar and Shimon Yahav and originally manufactured at Kibbutz HaGoshrim

XII. ENVIRONMENTAL

- Israel is the only country in the world that entered the 21st century with a net gain in its number of trees, made more remarkable because, this was achieved in an area considered mainly desert!
- IDE Americas Inc., a subsidiary of Israel's IDE Technologies Ltd that is already responsible for the brunt of Israel's salty-to-fresh water transformation, will be designing a 204,412-cubic-meter seawater desalination plant for the San Diego, California region.
- IDE Americas Inc., a subsidiary of Israel's IDE Technologies Ltd, to design project - the largest of its kind in western hemisphere. Pythagoras Solar makes the world's first solar window, which combines energy efficiency, power generation and transparency. This transparent photovoltaic glass unit can be easily integrated into 5. Hazera Genetics, a project of two professors at the Hebrew University

Faculty of Agriculture, yielded the cherry tomato — a tasty salad fixing that ripens slowly and doesn't rot in shipment.

- Better Place electric car network, Israeli Shai Agassi's brainchild, is implementing the Israeli pilot that will provide a model for a worldwide electric car grid.
- Elya Recycling developed and patented an innovative method for recycling plastic based on a specialized formulation of natural ingredients. Making the new raw material for handbags, reusable totes and lumber products requires 50 percent less energy than current recycling methods and 83% less energy than virgin manufacturing.
- HydroSpin is developing a unique internal pipe generator that supplies electricity for water monitoring and control systems in remote areas and sites without accessibility to electricity. TourEngine significantly reduces fuel consumption and harmful emissions by common engines through a sophisticated thermal management strategy. It can also be easily integrated with future hybrid engines, further improving their efficiency and environment-friendly attributes.
- Takadu provides monitoring software to leading water utilities worldwide. The product offers real-time detection and control over network events such as leaks, bursts, zone breaches and inefficiencies.⁴¹ Heliofocus led an industry trend to provide solar-energy boosting for existing coal or gas power plants, reducing carbon emissions and overall costs.
- Transbiodiesel makes enzyme-based catalysts (biocatalysts) used in the production of biodiesel.
- If forecasts are correct the demand for drinking water will exceed supply by 40 percent within the next two decades, Israel's Advanced Mem-Tech developed a better filtration membrane could that make all the difference in the race to prevent a global shortage of potable water. The process of pumping water through a membrane — a thin film-like polymer sheet with tiny holes in it — is not new. What is innovative is Mem-Tech's "high permeability" product that is far more effective than other filtration membranes used in water treatment systems. Because of the polymer of the membrane, one can process more water with less pressure. Less energy is needed to pump the water through, fewer membranes are required and there are less capital and operating expenses. Any time the system is smaller, everything can be downscaled
- Purifying the water with UV light. Israel's Atlantium has developed Ultra-Violet systems (validated by the U.S. Environmental Protection Agency) to render germs harmless without damaging equipment or generating high levels of ozone. It has just received \$3 million of funding to develop new uses for its technology.
- South America and India to go Blue. (Thanks to EDI) Israel's Blue I Technologies has raised \$3 million, for expansion into South America and India. Blue I's advanced water controllers and analyzers measure parameters such as Chlorine, pH, Redox, turbidity, conductivity and temperature.

XIII. ECONOMICS

- Work of Daniel Kahneman and Amos Tversky of the Hebrew University of Jerusalem explaining irrational human economic choices.
- Developments in Game theory. Israel Aumann of the Hebrew University of Jerusalem received the Nobel Prize in Economics for his work in this field

- The Rubinstein bargaining model, one of the most influential findings in game theory, refers to a class of bargaining games that feature alternating offers through an infinite time horizon. The proof is from Ariel Rubinstein 1982

XIV. DEFENSE

- Boeing protects planes with Israeli defense system. Boeing will offer Elbit Systems-produced directed infrared countermeasures (DIRCM) equipment with all of its military and civil aircraft. Boeing is working to integrate the systems on to new and existing aircraft.
- Uzi Submachine gun - invented by Uzi Gal. The development was completed in 1955.
Gabriel - a sea-skimming anti-ship missile.
- Arrow - a family of operational anti-ballistic missiles. Jointly funded and produced by Israel and the United States
- IAI Lavi - an ambitious Israeli production of a modern fighter aircraft. The production of the plane was carried out at Israel Aircraft Industries. The production of the plane was disbanded when the Israeli government concluded it could not finance production on its own
- Protector USV is an unmanned surface vehicle, developed by the Rafael Advanced Defense Systems. It is the first of its kind to be used in combat.
- Python - a family of air-to-air missiles (AAMs) built by the Israeli weapons manufacturer Rafael Advanced Defense Systems.
- Unmanned aerial vehicles - an aircraft that flies without a human crew on board the aircraft. Their largest uses are in military applications. Developed by Israel Aircraft Industries
- Nautilus laser system - a laser developed for military use. Jointly funded and produced by Israel and the United States
- Iron Dome - the only proven to work mobile anti missile and anti artillery air defense missile based system by Rafael Advanced Defense Systems designed to intercept short-range rockets and artillery shells. On April 7, 2011, the system successfully intercepted a Grad rocket launched from Gaza, marking the first time in history a short-range rocket was ever intercepted. The system has proven very successful in defending Israel from missile attacks by Hamas which now rules Gaza during the November 2012 missile attacks directed by Hamas against Israeli civilians.
- Barak 1 - a surface-to-air missile designed to be used as a point-defense missile system on warships, defending against aircraft, anti-ship missiles, and UAVs.
- MUSIC (Multi Spectral Infrared Countermeasure) - a system that counter surface-to-air heat-seeking missiles. It is manufactured by Elbit Systems.
- MagnoShocker - combines a metal detector and a taser which could be used to neutralized immediately a dangerous person. It was developed by the mathematician Amit Weissman and his colleagues Adir Kahn and Zvi Jordan.
- Reconnaissance satellite TecSAR - developed and built by Israel Aerospace Industries.

- Tavor TAR-21 assault rifle - a modern assault rifle designed with the aim to be used as the IDF's standard assault rifle. The rifle was developed by "Magen", the small arms division of the Israel Military Industries (IMI). The development of Tavor was completed in 2001. In 2005 Magen was sold to the Israeli company Israel Weapon Industries (IWI) which continues to develop and produce the rifle. The MTAR-21 (Micro Tavor) was recently selected as the future assault rifle of the Israeli Defense Forces, and within the next few years it will become the standard Israeli infantry weapon
- Technion Satellite - launched into space in July 1998, it is one of the smallest satellites in the world. Cube-shaped satellite which has 45 centimeter-long sides and weighs 48 kilograms and has an extremely low power consumption. The Technion satellite began as a student project of the Faculty of Aerospace Engineering, supervised by Haim Eshed and initiated by Giora Shaviv, former head of the Asher Space Research Institute (ASRI) at the Technion.
- Israel to make wings for F-35. Israel Aerospace Industries has signed a long-term contract with US defense giant Lockheed Martin to produce wings for the F-35 next-generation fighter jet. State-owned IAI already manufactures the wings for the F-16 jet and the T-38.
- Wall radar - a unique radar which utilizes Ultra Wide Band (UWB) to allow users to see through walls. Developed by the Israeli company Camro

XV. HUMANITARIAN

- In 1984 and 1991, Israel airlifted a total of 22,000 Ethiopian Jews (Operation Solomon and Moses) at Risk in Ethiopia, to safety in Israel
- When the U. S. Embassy in Nairobi, Kenya was bombed in 1998, Israeli rescue teams were on the scene within a day -- and saved three victims from the rubble.
- Israel was the first nation in the world to adopt the Kimberly process, an international standard that certifies diamonds as "conflict free."

XVI. CULTURAL

- Relative to its population, Israel is the largest immigrant — absorbing nation on earth. Immigrants come in search of democracy, religious freedom, and economic opportunity. (Hundreds of thousands from the former Soviet Union)
- Israel has more museums per capita than any other country
- With all of their oil money, what inventions, products and technology have Arab nations surrounding Israel and bent on its destruction created that have benefitted and protected mankind? Just think what positives could be created IF Arab countries worked WITH Israel.

XVII. OTHER MEDICAL INVENTIONS BY JEWS THAT HAVE BENEFITED MANKIND

- The cure for Syphilis was discovered by Dr. Ehrlich, a Jew.
- The Wasserman test for syphilis was discovered by a Jew.

- The test to detect Gonorrhoea was discovered by Neisser, a Jew.
- Digitalis for heart disease was discovered Ludwig Traube, a Jew
- Novocaine used in dental surgery was discovered by Widal and Weil, two Jews.
- Insulin for Diabetes was the result of research by Minkowsky, a Jew.
- Chloral Hydrate, used to control convulsions, was invented by a Jew.
- The Schick reaction for Diphtheria was invented by Bella Schick, a Jew.
- The Polio vaccine which eliminated the dreaded Infantile Paralysis as a major health threat by Jonas Salk, a Jew.
- Streptomycin which is used to treat Tuberculosis was invented by Zalman Waxman, a Jew.