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INTERNET POLICY IN ISRAEL: AN UPDATE

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Introduction

In August 1999, IASPS published *Policy Studies No. 43*, by IASPS Koret Fellow Amir Etzioni, *Internet Infrastructure in Israel: A Proposal for Reform*. Etzioni described the Israeli telecommunications market in general, and that of the Internet in particular, as diseased branches suffering from governmental over-regulation and being afforded protection, as a state monopoly, from competition. He estimated the damage to the Israeli economy in 1998 at \$100 million or more.

The Internet world has undergone many changes since the publication of *Policy Studies 43*. New technologies have penetrated global markets, Internet sales have accelerated, and service and quality in many countries have improved as prices have fallen. This *Policy Studies Update* will examine how the new technologies and global reforms have affected the Internet sector in Israel.

The theme that has been promoted by the Israeli media over the past two years, at sometimes almost daily frequency, has been that of privatization. The telecommunications market, the public was informed, was about to be opened to competition; the catch phrases bandied about were "licenses" and "concessions," tenders were to be published, and the whistle was sounded for competition. Some news articles actually quoted various telecom figures as claiming that the market was already in a state of competition.¹ This *Update* sets out to examine which of these statements and undertakings have in fact been borne out in reality, and how they have influenced the various market players.

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Regretfully, the citizens of Israel are not benefiting from new technologies; they have seen no reform implemented and merited few if any new licenses, concessions or tenders; they have not been vouchsafed the services of a domestic communications operator other than the state monopoly or been given access to broadband Internet. Israeli citizens have seen the persistence of poor quality and service, along with higher prices. This *Update* will estimate the damage occasioned to Israelis and to the economy as a whole, by reason of the current market structure.

Time was when one could go and make a cup of coffee while waiting for a simple page of text to download from the Internet onto one's computer. In the time it took to receive or send electronic mail, one could make enough coffee for all one's family and friends. As higher speeds became available, facilitating the transmission of data on broadband technology, information was downloaded from the Internet and transmitted within mere seconds.² Now broadband communications spell the difference between wasting time while waiting for your page to appear on the computer, and getting it in less than one second.³

The speed of data transmission on the Internet network is measured on the basis of the quantity of bits that can be transmitted in a unit of time, usually one second. The shift from the speed of hundreds of bits per second to thousands of bits per second found expression thirty years ago in the ability to send and receive e-mail. The shift from thousands of bits to kilobits per second, ten years ago, found expression in the option of surfing through simple Internet pages. Today, the passage from kilobits to megabits and gigabits per second facilitates new forms of communication. These include visual communications, visual discussions, telephone calls, interactive television and broadband, all transmitted *concurrently* on one single infrastructure, that of broadband communications.

The subject of broadband Internet services in Israel comes under the larger heading of the opening of the domestic communications market to competition. As in the past, the domestic communications market is controlled by the state monopoly, Bezek. When this market is opened to competition, Israelis will be able to obtain telecom services, including high-speed Internet on broadband, through different telecommunications operators. These will be able to provide, concurrently, both telephone services, broadband Internet, and even television broadcasts. Competition will then expand in other directions.

The question is whether the regulatory authority will step aside and enable the Israeli communications market to develop. The question must also be posed: What are the probable implications for the Israeli economy, and what damage will it sustain, if this picture is reversed and the present situation of scant competition is maintained?

As stated, in August 1999 IASPS published *Policy Studies 43: Internet Infrastructure in Israel: A Proposal For Reform*. The author, Amir Etzioni, conducted a survey of Israel's Internet infrastructure and Internet development in Israel and elsewhere; he also estimated the damage to the Israeli economy resulting from the dearth of competition in the local communications market, and the low level of competition in Israel's international communications market. The damage was estimated then at \$100 million annually, of which \$61 million took the form of inflated

Internet and telephone bills, and another \$40 million resulted from the loss of work and leisure hours.

This *Update* will first survey the development of the communications market, or lack thereof, since *Policy Studies 43* was published; second, estimate the annual damage sustained, correct to 2001, because Etzioni's recommendations of two years ago were not implemented; and, third, recommend a reform of the Israeli communications market.

Review

In 1999, various members of both the public and the private sectors warned of the damage being occasioned by the restriction of competition in the communications market, and the over-regulation that was interfering with natural market development. Some of these warnings were voiced by Shmuel Dankner, chairman of the cable TV company Matav, speaking at a meeting of the Israel Management Institute in July 1999:

The Ministry of Communications does have its achievements, but it has missed out on the Internet revolution. The three-year freeze did a great deal of damage to Israel's high-tech industry....I do not know what the damage is, but Israel lags behind, today, in Internet high-tech, because of the restrictions on speed.⁴

Policy Studies 43 likewise warned against the high level of government involvement in the communications market in general and in the Internet field in particular. The author's recommendations included a number of steps to open the domestic segment of Internet infrastructure to competition:

1. The lifting of restrictions on competing infrastructure providers, meaning opening the domestic communications market to competition with Bezek, by means of licenses being issued to additional domestic operators such as the cable television companies and the Eurocom, Barak, Golden Lines and Cellcom telecommunication companies.
2. The lifting of the restrictions applying to companies owning domestic communications infrastructure, though they do not currently operate in the communications sector. Israel Railways and the Israel Electric Corporation are capable of providing communications services to the general public.
3. Permission to be given for the use of new technologies such as information transmission by means of wireless and satellite technologies, in all segments of Internet use.
4. The granting of equal access to infrastructures belonging to state monopolies, meaning that companies such as Bezek and perhaps the concessionaire cable companies, would be obliged to make their infrastructure equally available to other Internet service providers (ISP).
5. The lifting of restrictions on mergers.

This is what should have happened, according to *Policy Studies 43*. Following is a survey of what actually happened.

Local Telecommunications Market Players

The domestic telephone system is controlled by Bezek. Bezek is a state corporation, in which the state holds a 54.6 percent share. In 1984, Bezek obtained the monopoly on Israel's domestic telecommunications by virtue of the Bezek Law enacted two years earlier. Section 50 of the Bezek Law provided a legal framework for Bezek's exclusivity in telephone and communications infrastructures and was repealed in June 1999. With its repeal, the minister of communications was in a position to grant concessions to another domestic operator. This has not yet happened.

In July 2001, Amendment 25 to the Bezek Law was adopted; one of its clauses is a legal basis for giving those licensed to provide telecommunication services access to and use of Bezek's infrastructures. According to this amendment, the minister of communications may establish rules in this matter, either in regulations or in a license, or the licensees may settle the matter amongst themselves.

The Israeli television industry consists of Channel One (state owned), Channel Two (a state-granted monopoly on commercial TV) and the cable TV companies Matav, Golden Channels and Tevel (hereafter: "the cable companies") and also YES, a satellite TV company. In 1992, the cable companies were awarded a ten-year concession for the provision of television broadcasts, which will expire in the years 2002-2004. The Ministry of Communications assigned each company a service area, in which it was to hold a broadcast monopoly. In 1998, the YES satellite company, partly owned by Bezek,⁵ was granted permission to provide television services in order to compete with the cable companies. The cable TV companies, which boast more than 90 percent penetration into Israeli households, already maintain a domestic communications network. By dint of a systems upgrade, they would be able to provide domestic communications and broadband Internet service, if the government would so allow.

Other communications companies wishing to obtain a domestic communications operator's license (hereafter: "domestic operator") include the telecommunications company Eurocom, which established Ofek – The New World, a cellular communications company, and the Barak and Golden Lines companies, which provide international telephone service.

The Internet industry includes Internet service providers which are responsible for data communications transmission in the local segment, running from local communications channels to the international segment and on to the global Internet system. Dominant providers in this market include Netvision, Bezek International Internet (a Bezek subsidiary), Internet Gold and Barak ITC.

Erroneous Assumptions of the Regulatory System

The campaign for opening Israel's communications market to competition is being fought on two fronts. On the first front, the cable companies have been competing in the race against Bezek to obtain a license for the provision of broadband on the existing cable infrastructures. On the second front, potential competitors are pitted against one another to obtain licences for domestic communications transmission, both on independent infrastructures and on the existing infrastructures of Bezek or the cable companies (this multi-user use is called unbundling).⁶ If granted domestic operator licenses, these companies would provide not only telephone services but also data communication and would be able to compete in the broadband field.

Policy makers in Israel's communications market operate under the sway of two principal myths which have always constituted a basis for preventing competition. According to the first myth, competition with Bezek in the field of domestic communications will take place solely between the cable companies and Bezek. The Ministry of Communications has based all its policy on this misconception. Ministry of Communications Director General Danny Rosenne has said that a tender would be of no importance, what matters is that the cable companies will give Bezek a run for its money.⁷

This misconception was based on the erroneous premise that competition in the communications market would take place by means of discrete infrastructure systems, and that, accordingly, Bezek's rivals would need to set up alternative infrastructure systems. Since the cable companies already had cable infrastructure in place, they obviously constituted the sole competition to Bezek.

Another myth which has taken hold in the government is that, in order to achieve genuine competition in the communications market, new competitors must be required to provide "universal service." A universal service requirement means that a communications company cannot choose the areas where it wishes to provide communications services on a cost/benefit basis; rather, the Ministry of Communications should require it to service a number of areas that will cause financial losses, since they do not meet the test of economic viability. Minister of Communications Reuven Rivlin said:

Assuring universal service will remain the prime interest of the Ministry of Communications, even in a competitive market and in an era in which competitors are taking bites out of Bezek's market share, and this will dictate the regulation policy for years to come!! [*sic*]⁸

The move to add this universal service clause to the amendment to the Bezek Law in the Economic Arrangements Bill for the year 2000, approved by the Knesset, was initiated by Bezek. What the amendment means is that each competitor must choose 15 out of the 52 areas into which the ministry divided the state of Israel, 12 of them out of economically attractive areas and 3 out of a list of unattractive areas with low profitability potential. On this basis, a very high entry threshold was set for new competitors, thus helping Bezek to maintain its monopoly.

Table 1 examines the communications market's two battle fronts. The first part lists the events that have taken place in the past two years. It emphasizes the assurances and declarations that politicians in the regulatory system have been making regarding Israel's communications market, with a parallel depiction of what has resulted from these assurances and declarations, and what the results signify.⁹

Some of these declarations and assurances culled from the local press and Internet news sites were never carried out at all, while others that were, such as the enacting of new regulations and other bureaucratic measures, are of no practical significance. The reason why these measures are meaningless is that they have not brought about any change in the market which could influence prices, quality or service. These are market change indicators that Israelis would have been able to perceive even without the media publishing any declarations or assurances.

At first, the communications market might appear to be in good shape. The minister of communications signed new regulations in September 2000, facilitating the entry of new competitors into the sector. A domestic operator's license was granted in February 2001 to Ofek, a potential Bezek rival, and broadband has ostensibly arrived in Israel. But many Israelis are asking why Bezek is still the only channel for local communications. Why is broadband only offered by means of Bezek's ADSL? And why are the private sector, the public and the Israeli economy suffering from inferior service and slow Internet service?

Table 1 provides the answers to all these questions by illustrating how devoid of any content are the promises and declarations the public has been given over the years. The table highlights the degree of stagnation that actually holds sway in the communications market. Essentially, the involvement of the government in the communications market boils down to two principal modes of action: one consists of scattering promises which remain unfulfilled, while taking actions that are devoid of any practical significance; the other finds expression in the reinforcement of Bezek, the state monopoly, while the entry into the market of new competitors is delayed and blocked.

Unfulfilled Promises and Meaningless Acts

At least five times in the past two years, Ministers of Communications Binyamin Ben-Eliezer and Reuven Rivlin, and Ministry of Communications Directors General Danny Rosenne and Uri Olnick have announced the publication of a tender for a domestic communications operator in combination with LMDS wireless access frequencies. As the table shows, the promised tender has not been issued. Likewise, acts ostensibly attesting to the fulfillment of the promise of competition in domestic communications, such as the grant of licenses to Israel Railways, and to Ofek, have proved to be empty gestures. These licenses, while a sufficient condition for an announcement, are not, in practical terms, a sufficient condition for the opening of the communications market to competition.

Table 1
Statements, Promises and What Actually Happened

| Subject: Opening the Market to Competition | | | |
|---|--|---|--|
| Date | Statement/Promise | Communications Market Implementation | Upshot |
| July 1999 | Minister of Communications Binyamin Ben-Eliezer announces that he will take steps to have tenders published for domestic operators and end Bezek's monopoly in domestic communications. ¹⁰ | No domestic operators tender has been issued to date. Bezek is still a monopoly in domestic communications. | Promise not kept. X |
| September 1999 | Minister of Communications Binyamin Ben-Eliezer: "I am going to open the market to competition. In a competitive market, there are no restrictions - anyone can compete. Anyone so wishing can take part in the information highway contest. The cable companies will provide Internet; Bezek will provide Internet; the satellite TV- anyone who so wishes. They will be differentiated on the basis of quality and price - let the consumer decide...by the middle of next year, the tender for selection of 3-5 LMDS wireless telephone operators will be ready..." ¹¹ | <p><i>In light of these promises, the private market gets ready to compete:</i></p> <ul style="list-style-type: none"> • The 3 cable companies begin moves for their merger (July 1999). • Matav cable company invests \$3 million in setting up broadband provision infrastructure. • Eurocom begins to set up an Internet-Protocol-based system combining wireless technologies for broadband communication, as an alternative to Bezek (October 1999). • Cellcom establishes a domestic network of optical rings in business centers and spreads optic fibers between its various transmitters throughout Israel (November 1999). <p><i>Bezek prepares for competition:</i></p> <p>Bezek Chairman Izzy Tapuchi and General Manager Ami Arel demand that the minister of communications delay approval of the amendments to the Bezek Law (September 1999).</p> | Preparation and development by private sector companies. vs. Prevention and arrest of competition by state monopoly. |
| November 1999 | Ministry of Communications Director General Danny Rosenne notifies the Knesset Science Committee that the ministry will shortly issue an international tender inviting bids from private bodies for official bulletin broadcasts and data transmission on 4 broadband frequencies. | To date, no tender has been issued for official bulletin broadcasts or data transmission on 4 broadband frequencies. | Promise not kept. X |

| Date | Statement/Promise | Communications Market Implementation | Upshot |
|---------------|---|--|--|
| December 1999 | Minister of communications: "It is my intention in the very near future to sign regulations facilitating competition with Bezek in the provision of domestic communication services....I have no doubt that delay in broadband provision on the Bezek network and the cable network is injuring the Israeli economy." ¹² | September 2000: Minister of communications signs regulations for opening Israel's communications market to competition, but these regulations are devoid of practical significance as competitors are not being licensed. | No practical significance. X |
| December 1999 | The minister of communications and the Ministry of Finance's budget director, David Milgrom, submit to the Knesset Finance Committee amendments to the Bezek Law requiring competitors to provide universal service. | This rider operates to the benefit of Bezek. | More barriers erected against the entry of competitors. X |
| January 2000 | Ministry of Communications and cable companies reach a settlement including an undertaking that cable companies will receive a license for operating domestic communications, including Internet and telephone services. | Settlement was overruled when Attorney General Elyakim Rubinstein decided on April 10, 2000, that the cable companies' license must be issued only within a new legal framework. Enactment of Amendment 25 to the Bezek Law, enabling the minister of communications to license the cable companies, was completed on July 25, 2001, but, 7 months later, the minister had not yet granted the cable companies the licenses. | Settlement is of no practical significance. X |
| January 2000 | Ministry of Communications licenses Israel Railways to use its optic fiber network to sell communication services. Minister of Transportation Yitzhak Mordechai is in favour. | Ministry of Justice orders relevant procedures frozen. Ministry of Finance, Bezek and Bezek employees voice opposition. Bezek threatens to petition High Court of Justice; employees threaten to strike. | Move void of significance. X |
| May 2000 | Communications Ministry approves year-long trial by Ofek – The New World to implement privately financed internal broadband communications in Ariel, using LMDS wireless frequencies. Ariel experiment is dubbed "Smart City." | 25 months after application by Ariel Mayor Ron Nahman in April 1998 for approval for an advanced trial to be financed by U.S. investors, the Ministry of Communications approves only a partial trial. ¹³ | Delay and blocking of private initiatives. X |
| February 2001 | Ofek – The New World group obtains domestic operator license. | Lacking wireless frequencies, which are to be distributed solely by Ministry of Communications tender, Ofek is unable to provide domestic communications. | Frequencies license is meaningless. X |

| Date | Statement/Promise | Communications Market Implementation | Upshot |
|--|---|--|--|
| April 4, 2001 | Ofek, Barak, Cellcom and Golden Lines apply to compete in tender for domestic operator license combined with LMDS wireless-access frequencies. | June 2001: Communications Minister Reuven Rivlin announces postponement of LMDS wireless-access frequencies tender: "A time window of several weeks to facilitate necessary joining of forces." ¹⁴ | Promise not kept. X |
| July 25, 2001 | Amendment 25 to Bezek Law passes 2nd and 3rd reading in Knesset. Inter alia, amendment confers domestic communications license on cable companies; use of infrastructures by competing companies (unbundling) is left to minister of communications' discretion. | To date, domestic communications market still controlled by state monopoly. Minister of communications has still not issued cable companies a domestic operator's license. | Promise not kept. X |
| Subject: Privatization of Bezek | | | |
| December 1999 | Minister of communications emphasizes in Knesset Finance Committee debate that he will not support Bezek privatization unless employees' future is assured. | December 1999: Ministry of Communications legal advisor, Yizhar Tal, adv., notifies Bezek Workers Committee attorney that, contrary to employees' contention, opening of communications market to competition is not contingent on agreement being reached with employees. | Confusion X |
| December 1999 | Bezek Workers Committee chairman Shlomo Kfir announces that employees will strike following minister of communications' decision that opening of communications market to competition is not contingent on agreement being reached with employees. | January 2000: Minister accepts employees' demand that opening up of communications market to competition be rendered contingent on agreement for preserving employees' rights, after workers committee threatens strike. | Surrender to Bezek Workers Committee. X |
| August 2000 | Ministerial Privatization Committee resolves to privatize Bezek by 1 year from date of resolution, through sale of 51 percent of its shares to a private company. Government undertakes to link privatization to NIS 1.6 – NIS 2 billion Bezek employee severance agreement; capital for financing agreement to be raised only after publication of notice of sale of the controlling shares. | December 2000: State Companies Authority resolves to delay date of tender for sale of Bezek controlling shares, slated for end of month, because of change in security, diplomatic and political situations. | Promise not kept. X |

| Date | Statement/Promise | Communications Market Implementation | Upshot |
|-------------------------------------|---|--|--|
| February 2001 | Prime Minister Ariel Sharon announces he will privatize Bezek. | June 2000: First meeting of Ministerial Privatization Committee headed by prime minister resolves to publish privatization notice in August 2001. Bezek not yet privatized. | Promise not kept. X |
| March 2001 | Defence Ministry consents to a modification of the Bezek Ordinance that prohibits control of the company by foreign concerns; but demands that a sale of even one share be subject to approval by communications minister. (The Ministerial Privatization Committee had resolved in August 2000 to permit up to 80 percent foreign control of Bezek). | May 2001: Failing agreement between Ministry of Defense and State Companies Authority, the notice for the sale of the controlling shares of Bezek will not be published. To date, Bezek is still a state corporation, and no date has been set for its privatization. | Promise not kept. X |
| April 2001 | Minister of Communications Reuven Rivlin in an interview with <i>Globes</i> : "Bezek is no longer a monopoly." | January 2002: Bezek is still a monopoly in the domestic communications field, pursuant to the Bezek Law. | Remarks divorced from reality. X |
| July 2001 | State Companies Authority Director Yaron Yaakovs introduces Bezek to 5 U.S. investment banks. All promise to examine possible participation in process, once the company's privatization notice is published. | To date, the privatization notice has not been published. | Unfulfilled promise. X |
| Subject: Broadband Internet: | | | |
| 1999 – November 2000 | Dispute between ministries re: grant of approval to cable companies to provide broadband services; see figure 1 below. | Much arguing, no movement. | Maintenance of Bezek monopoly. |
| March 2000 | Bezek Teleprocessing Division Manager Yoni Sapir: "Bezek is ready with the service and wishes to provide it starting tomorrow. We can provide broadband, up to 250 times as fast" as the existing speed at that time using regular modem dialing. The new service will be priced at \$23 (NIS 99) per month. | <ul style="list-style-type: none"> • Bezek started marketing the service only 4 months after obtaining approval. • ADSL service theoretically enables rapid transmission at a maximum speed of 8 megabits per second, only 15 times the speed at the time of the declaration. • The price charged by Bezek is \$34 (NIS 149) per month for infrastructure use and another \$40-\$70 per month for service from the ISP. | Deception and unfulfilled promises. X |

| Date | Statement/Promise | Communications Market Implementation | Upshot |
|----------------|--|---|--|
| May 2000 | Ministry of Communications Director General Danny Rosenne tells the Knesset Economic Affairs Committee that the ministry will confer with Bezek on a compromise enabling Bezek to obtain a broadband license, saying that once the minister signs the regulations, the tender for frequencies and satellite will be published. | November 6, 2000: Minister of Communications Binyamin Ben-Eliezer signs Bezek's broadband license. To date, the frequencies tender has not been published. | Bezek gets broadband headstart and monopoly, too! |
| December 2000 | Antitrust commissioner declares Bezek a monopoly in the broadband infrastructures industry. | January 2001: Bezek appeals this declaration, claiming that it cannot provide the service to 20 percent of telephone subscribers, even though it declared, in March 2000, that it could provide the service to all telephone subscribers. | Bezek fails to meet commitments. X |
| February 2001 | Ministry of Communications threatens Bezek with monetary sanctions because of broadband service defects, failure to meet commitments for the various services, and failing to comply with the Ministry's specifications re: the wording of contracts with broadband providers. | No sanctions imposed on Bezek even though, because of its failure to meet its commitments, contracts have still not been signed with broadband service providers. | Non-enforcement of state monopoly's promises. X |
| March 13, 2001 | Bezek launches initial campaign to promote surfer hook-up to broadband using ADSL (4 months after obtaining approval for broadband transmission). | The company's customers who hook up to ADSL broadband complain of poor service quality. The company maintains that it can hook up only 70 percent of Israel because of a technological problem. | Bezek fails to abide by commitments. X |

Reinforcing Bezek and Stopping Rivals

How is the state monopoly being reinforced? Bezek is being accorded priority and a further monopoly in broadband, and the Bezek Workers Committee is being further empowered, while private initiatives are held up and more barriers are erected against the entry of new competitors.

The biggest hurdle standing in the way of the entry of new competitors into Israel's communications market is the universal service requirement. By imposing this requirement even on companies that are vying for a domestic operator's licenses in wireless frequencies, the Ministry of Communications shows its lack of technological and economic comprehension. Broadband communications technology using LMDS wireless frequencies and optic fibers calls for a large investment that starts to be economically viable at over 320 telephone lines.

Accordingly, it is intended primarily for high-density business centers where there is a commercial need for broadband communications, and for which businesses will pay, making the investment financially sound. These conditions contrast with those required by a private domestic user: A domestic PC user does not need the kind of fast broadband communications that businesses need, nor is he in a position to pay for this expensive service, whereas commercial companies are.¹⁵

Israel is the only place where a universal service requirement exists in the wireless frequencies technology. The company [Cellcom] will prefer to make direct cash payments to residents of those areas to pay for Internet accounts with Bezek, rather than set up [new] costly wireless communications infrastructure in these peripheral areas.¹⁶

In contrast, requiring the cable companies to provide universal service is logical from both a technological and economic points of view. The cable companies have already connected private homes in the framework of their multichannel broadcast concessions. The additional investment required for broadband transmission to these homes is small by comparison with the investment needed for setting up a completely new infrastructure; therefore, the prices that the cable companies can charge for connecting their subscribers' homes should be competitive with Bezek's prices.¹⁷

Thus, unlike the cellphone operators, the cable companies do meet the conditions of the two myths whereby the Ministry of Communications operates: competition by means of discrete infrastructures, and universal service. So we are left with the question of why the cable companies are not yet providing the residents of Israel with broadband services.

Bezek obtained a license to provide broadband services using ADSL technology that enables information to be transmitted on the copper wires and optic fiber infrastructure that connects the Bezek exchanges to private homes. The cable companies, however, have not obtained permission to provide broadband services, despite the availability of the technology, and even though they began technological trials for providing the service as early as 1999.

Why did Bezek get its permission in November 2000, while permission for the cable companies was delayed until the relevant legislation was completed in July 2001? To understand the underlying logic, we must realize that civil servants in the government system operate in accordance with a fundamental misconception: Each government ministry assumes that the modus operandi it has chosen is the only means of ensuring the public interest.

Ministries Delay Competition

The principal government players involved in the decision-making process in the granting of permission to cable companies to provide broadband services were the Ministry of Finance, the Antitrust Authority, the Ministry of Communications, the Ministry of Justice and the Attorney General's Office. What follows will outline the differences of opinion between

these players. The interests of all these players have conflicted, which is why permission was delayed for over 18 months. Each ministry tends to act in its own self-interest and that of its constituents. Given Israel's highly fractious political culture, the public interest is rarely served.

The concessions awarded to cable companies Tevel, Golden Channels and Matav are due to expire in the period 2002-2004. For purposes of broadband transmission, the cable companies must upgrade their systems. This calls for investments which will only become profitable as operations continue in the long term. The cable companies therefore asked the government to guarantee they would be allowed to provide broadband service.

The government bodies involved in regulating the communications sector are:

The Ministry of Finance: Ministers of finance like to think they guard the state coffers. Then Minister of Finance Avraham (Baiga) Shochat insisted that the cable TV concessions would only be extended if the companies compensated the Ministry of Finance. The concessions, in other words, would need to be purchased from the government. In August 1999, the minister of finance submitted to Minister of Communications Binyamin Ben-Eliezer a paper emphasizing that consideration should be accorded to publishing a tender for the extension of the cable companies' concessions, thereby enabling other entities to compete for the cable infrastructure operating concession. The guiding principle was that *concessions should be acquired rather than awarded*. The payment the minister of finance was demanding from the cable companies stood at \$1.5 billion.¹⁸

The Antitrust Authority: The function of the authority and its commissioner is to maintain a competitive environment and afford conditions conducive to competition. In the case of the cable companies, Antitrust Commissioner Dr. David Tadmor advocated the simultaneous provision of broadband services by at least two operators. For this reason, Tadmor favored giving the cable companies the green light, on the assumption that they would compete with Bezek in broadband provision. The declared position of the Antitrust Authority was that the issue of the state's financial dealings with the cable companies should be kept completely separate from the issue of the immediate need to allow for broadband Internet services.

The Ministry of Communications: The self-declared role of the Ministry of Communications is to develop communications in Israel, by adopting state-of-the-art technologies in the fields of infrastructure, telecommunications and the Internet.¹⁹ Regarding the cable companies, Ministry of Communications Director General Danny Rosenne proceeded on the assumption that competition in communications would only be possible once the cable companies were given permission to provide broadband services. The Ministry of Communications blandly disregarded the business sector; potential rivals to Bezek might include for instance, operators of wireless communications and optic fibers, but these are unable to get into the act unless use of LMDS frequencies is allowed, whether by tender or otherwise. To date, no such tender has been published. The Ministry of Communications has focused its attention exclusively on supporting the cable companies, while battling the Ministry of Finance and the Ministry of Justice. A policy paper published by the Ministry of Communications in February 2000, regarding the issuing of licenses for the provision of communications and broadcast service through the cable system, reads as follows:

“Competition now” is the right path in the communications sector; delaying competition because of legal wrangling means postponing the harvesting of its fruits; in the opinion of the Ministry of Communications, competition must be got under way without delay, leaving all legal issues, including the question of the consideration due to the state for granting licenses to the cable companies for the provision of communication services, to be sorted out once competition is already in progress. In this way the public gains and the state does not lose.²⁰

The Ministry of Justice and the Attorney General: One of their functions is to ensure properly enacted and executed legislation by the state’s governing bodies, and to see to it that government entities operate in accordance with the law. The Ministry of Justice and Attorney General Elyakim Rubinstein were called upon to settle a dispute between government ministries regarding extending concessions and granting broadband service approval to the cable companies. After obtaining opinions from the Ministry of Finance, the Ministry of Communications and the antitrust commissioner, Rubinstein and his second-in-command Davida Lehman Messer determined, in an opinion conveyed by Rubinstein to the prime minister on April 10, 2000, that the dispute should be resolved only through legislation.²¹

All these government entities were pulling in different directions. The ruling of the attorney general appeared decisive. On November 6, 2000, Minister of Communications Ben-Eliezer signed a license for Bezek to operate ADSL broadband services. On July 25, 2001, legislation was completed on Amendment 25 to the Bezek Law. Amendment 25 empowers the minister of communications to award domestic operator and broadband licenses to the cable companies. However, such licenses were not awarded to any cable companies till March 2002, despite the legislation. Bezek’s monopoly in broadband services was reinforced. Overinvolvement on the part of the government is not helping to advance the economy but is rather delaying its development and, therefore, in order to allow the Israeli economy to grow, the diminution of government involvement in the economy is necessary.

Table 2 shows the disputes between the various government ministries on extending the cable companies’ concessions and issuing approvals for the provision of broadband services. The table also explains the allegations of many private sector concerns that the main problem in Israel’s communications market is that superfluous red tape is delaying its development,²² and also that the prevailing atmosphere of uncertainty is hampering the activity of private companies in the market:²³

...There exists an entire bureaucracy that is hampering activity and actually preventing the introduction of technological innovations into the market...nowhere in the world is control as tight and as close.²⁴

We have two teams dealing with the matter at a frantic pace. There is a team that is leading Cellcom toward the opening of the market to competition, and is at the final recommendations stage; while the main problem is that nobody knows how the Ministry of Communications is going to open the market.²⁵

The main barrier is the lack of clarity prevailing in the industry. There are no definite or uniform rules for opening the communications market to competition, such as, for example, who is entitled to be awarded a communications license.²⁶

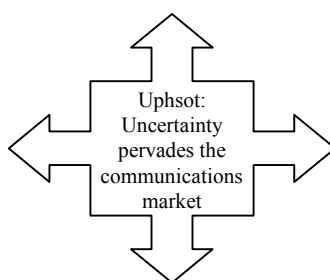
Table 2
Interministerial Dispute on Award of Broadband Licenses to Cable Companies

| Ministry of Communications | |
|----------------------------|---|
| August 1999 | Attacks Ministry of Finance claiming cable companies' concessions are valueless since, in near future, any concern may obtain license to compete in communications market, if it sets up suitable infrastructure. |
| December 1999 | Argues that dependency on extension of concessions is sole factor delaying opening of market to competition. |
| December 1999 | Minister of Communications Ben-Eliezer in interview with <i>Globes</i> : "Everything is interrelated, and also relates to the subject of the competition that should evolve. Only nothing interests the Ministry of Finance except its money." ^(a) |
| January 2000 | Meeting with Ministry of Finance, which concludes by resolving to refer decision to attorney general. ^(b) |
| January 2000 | Minister of Communications asks Prime Minister Ehud Barak to intervene in interministerial dispute. ^(b) |

Action: The Minister of Communications awarded Bezek a broadband license in November 2000. The Bezek Law was amended in July 2001; the cable companies received their first licenses in March 2002.

| Antitrust Authority | |
|---------------------|--|
| November 1999 | Moshav Movement Secretary-General MK Shalom Simhon calls on Antitrust Commissioner David Tadmor to ban cable cos. merger until all communities are connected to cable network. |
| February 2000 | Authority's declared position: issue of state's financial dealings with cable companies should be kept completely separate from the issue of the immediate need to start providing broadband Internet services, in order to promote competition. |

Action: Authority declares Bezek a broadband monopoly.



| Ministry of Justice | |
|---------------------|--|
| January 2000 | Prime Minister Ehud Barak and ministries call on Attorney General Rubinstein to settle issue of cable companies' concessions extension. ^(b) |
| April 10, 2000 | Ruling: Minister of communications may not award communications licenses to cable cos., barring material change in Bezek Law. Cable companies' concession requires them to sell their infrastructures if another concessionaire is chosen. Ministry estimates legislative process to take not more than a few months. ^(c) |

Action: Amendment 25 to Bezek Law completed on July 25, 2001, after 15 months.

| Ministry of Finance | |
|---------------------|--|
| July 1999 | Demands that award of domestic operator licenses to cable companies be contingent on their undertaking not to claim financial compensation from the state in response to the multichannel television market being opened up to competition, with the advent of satellite broadcasts. |
| August 1999 | Demands that valuation be made regarding extension of cable companies' concessions for another ten years. |
| August 1999 | Demands that a tender be issued for the award or extension of concessions to cable companies. |
| December 1999 | Withdraws demand for new tender. Claims payment of \$1.5 billion royalties in consideration of extension of concessions. ^(d) |
| January 2000 | Meeting with Ministry of Finance, which ends by resolving to refer the decision to the attorney general. ^(b) |
| July 2000 | Legal advisor to the Ministry of Finance submits to attorney general an opinion alleging the minister of communications may not lawfully extend the cable companies' concessions. ^(c) |

Action: July 2001: Agreement is reached between the Ministry of Finance and the cable companies whereby the companies are to pay royalties for a period of 12 years. The amount is estimated at \$140 million. The agreement is due to take force on January 1, 2003, but only on condition that the companies are awarded a communications license.

Sources for table 2:

- a. *Globes*, December 12, 1999
- b. Ministry of Communications Director General Danny Rosenne, interview with the author, January 23, 2001.
- c. Attorney General Rubinstein, *Decision: Licensing for the Provision of Communications Services and Broadcasts by Means of Cable Infrastructure – Dispute Between Ministry of Communications and Ministry of Finance*, April 10, 2000, Jerusalem [Hebrew].
- d. Knesset Economic Affairs Committee debate, January 26, 2000, <http://www.knesset.gov.il/takzur/tak230100.htm#vaadot>

The Ministry of Communications

As noted, seven months after the attorney general's ruling in April 2000, Bezek was given approval for the provision of broadband services using ADSL technology.

In December 2000, Antitrust Commissioner Tadmor declared Bezek a broadband services monopoly. He had two good reasons for doing so: Bezek is the only concern in Israel licensed to provide broadband infrastructure, serving 100 percent of broadband Internet subscribers in this country. It retains its exclusivity notwithstanding the existence of potential competitors, such as the cable companies and Cellcom, which own competitive infrastructure and are technically and economically capable of providing competing broadband services; and, Tadmor's move enables broadband service prices to be supervised.

Table 3 outlines the chain of events described above, and the implications of the Ministry of Communications' policy for business sector broadband consumers. The state corporation travels a road with green lights, where the Ministry of Communications acts on its behalf by clearing the road of potential rivals, while at the same time failing to enforce Bezek's own commitments. All others are forced onto a road with red traffic lights, where the Ministry of Communications piles up obstacles against the cable companies and broadband providers.

Table 3

Development of the Broadband Services Market

| <i>Public Sector:</i> November 2000 | <i>Private Sector:</i> November 2000 |
|--|--|
| Bezek awarded approval for provision of broadband. | By order of the attorney general, approval to be issued to cable companies only after legislative amendment. |
| Bezek's agreements with ISPs restrict competition and are disqualified. | Debate on amendment to Bezek Law sent to Knesset Economic Affairs Committee, following approval by the Ministerial Committee for Privatization. |
| Bezek declared a monopoly in broadband infrastructures. | Prime minister upholds attorney general's position rejecting approval for cable companies. |
| Bezek does not comply with Ministry of Communications directives; offers only 2 out of 4 services. | Netvision Internet service provider files 71 appeals against the ADSL contract of Bezek; Internet service provider Barak Online opposes Bezek's ADSL contract. |

| <i>Public Sector:</i> | <i>Private Sector:</i> |
|---|--|
| January 2001 | |
| Bezek appeals its being declared a broadband monopoly since it is technically incapable of serving all subscribers. | |
| February 2001 | February 2001 |
| Ministry of Communications threatens Bezek with monetary sanctions because of deficient provision of broadband services. | Knesset Economic Affairs Committee debates unbundling – use of a monopoly’s infrastructures by competitors. Bezek opposed, claiming competition should be based on rival infrastructures. This method would bar the entry of new competitors into the market because of high costs of infrastructure investment. |
| Attorney general orders Bezek to transfer information on broadband Internet customers to antitrust commissioner, suspecting discriminatory use of the customer base vis-à-vis Internet service providers. | |
| March 2001 | |
| Bezek launches initial campaign for expansion of broadband, 4 months after obtaining approval for broadband transmission. | |
| May 2001 | May 5, 2001 |
| Bezek obtains approval in principle to increase its YES holdings to 50 percent | Cable companies initiative to merge is frozen. |

Internet Costs, 1998-2001

Israel’s tight government control impacts on rates charged and services rendered to telephone and Internet consumers. *Policy Studies 43* showed that the cost of Internet use in Israel is one of the highest in the Western world. This is because of the absence of competition in the domestic telephone sector and the low level of competition in international communications.

Internet service providers are required to pay the high cost of international communications from Israel, which they pass on to consumers. In 1999 it was thought that the international communications market was to be opened to competition at the beginning of 2002, since the concessions awarded to Barak, Golden Lines and Bezek International were to expire at the end of 2001. Even Bezek Director Ami Arel thought so; he argued against regulations requiring a structural separation between Bezek and its subsidiary, Bezek International:

...But let us get back to the future for a moment. In 2002, when anyone who so wishes can come and compete in the international sphere, and when competition takes place in the domestic phone calls field, will there be any logic to the structural separation?²⁷

Today, at the end of 2001, it appears that the international communications field will not be opened up to competition to “anyone who so wishes.” The market was still not open in January 2002; that would have required decisions to have been made by June 2001. For that reason, the state of affairs described *in Policy Studies 43*, in which certain Internet service

providers were compressing a large number of users onto a small communications line in the international segment, remains unchanged. This compression causes a slowing of the transmission and is expressed in inflated telephone bills to Internet service providers.

Table 4 sets forth the various costs of connection to the Internet in 1998 and 2001. Payment to Bezek per single call unit varies in accordance with the time of use, the day of the week and geographic location, and accordingly, actual cost varies from one consumer to the next. Likewise, the cost of the Internet service provider varies, depending mainly on the type of service package chosen by the user. The packages vary in accordance with monthly surfing time and hours of use. Packages commonly in use today include the “free monthly surfing” arrangement, in which a fixed monthly payment is charged regardless of the number of surfing hours, and a connection for 10 or 20 hours per month, including a lower fixed monthly payment, but in which each additional surfing hour costs \$1-\$1.7. The estimate shown in the table is a conservative one since it does not include various payments that are only relevant to some consumers, such as maintaining a line.

Table 4
Average Cost Per Surfing Hour in Israel (\$, including VAT)

| Type of Payment | Average Cost Per Hour ^(a) | |
|---|--------------------------------------|------------------|
| | 1998 | 2001 |
| Payment to Bezek, single call units, per hour | 0.44 | 0.63 |
| Payment to Internet service provider | 1-1.75 | 1-1.7 |
| Total cost per hour of Internet use | 1.44-2.19 | 1.63-2.33 |

Source: Bezek, *Pricelist*, March 1, 2001[Hebrew]. Exchange rate: \$1 = NIS 4.416 (December 31, 2001).

a. Average cost per hour is based on rates of 0.5, 4.5 and 9 agorot per minute.

Table 4 shows that prices charged by competing Internet service providers declined, compared with an increase in the prices of Bezek, which remains a monopoly in local communications. The slight decrease in Internet service provider prices is offset by the moderate increase in Bezek prices and, accordingly, the average cost per hour's surfing in Israel has risen by 10 percent.

Table 5 gives two examples of the average cost of use per 100 hours to the Israeli consumer using regular dialing:²⁸ Two types of connections are considered: dial-up telephone line and frame relay, intended for a network of a number of computers, usually used in business premises.²⁹

Table 5

100 Internet Hours: Monthly Cost
(\$, does not include indirect costs such as electricity and computer depreciation)

| Type of Service | 100 Surfing Hours in Dial-up Telephone Line Connection | | Unlimited Surfing 2001 | Fixed Connection, Frame Relay | |
|---|--|-----------|---------------------------|-------------------------------|------------|
| | 1998 | 2001 | | 1998 | 2001 |
| Payment to Bezek, single call unit/hour | 44 | 63 | | | |
| Fixed payment to Bezek ^(a) | 12 | 10 | 32 | 130 | 123 |
| Fixed payment to Internet services provider | 37 | 17 | 17 | 280 | 169 |
| Total | 93 | 90 | 49 | 410 | 292 |

Source: Bezek, *Pricelist*, March 1, 2001 [Hebrew]; Barak On-Line (\$16), Bezek International Internet (\$19), Golden Internet 012 (\$15) and Netvision (\$19) service centers; for unlimited monthly surfing. The average is \$17.25.

a. Assuming the telephone line was acquired specifically for Internet use, and there is a fixed monthly payment to Bezek for maintaining the line.

In March 2000, the Knesset approved a new rate package for Bezek for stationary domestic communications, including a special rate package for Internet surfing. The Internet surfing package allows for unlimited Internet surfing at a monthly rate of \$22 (NIS 99), payable to Bezek in addition to the payment to the Internet service provider.³⁰ As table 5 shows, use of a monthly rate rather than a rate determined on the basis of charging per single call unit has reduced the monthly cost per 100 hours by approximately 45 percent. Only if one surfs more than 35 hours does it become worthwhile to connect at the unlimited surfing rate of \$22.

“Heavy” surfers who surf for more than 40 hours per month constituted 23 percent (i.e., 230,000 persons) of total Israeli surfers in 2001.³¹ The savings to these surfers can be calculated on the basis of the difference between the cost of surfing on a dial-up telephone line paying by call units, and the cost of unlimited monthly surfing. An Israeli consumer putting in 40 surfing hours per month saves \$3.20.³² The more surfing hours per month the surfer uses, the greater his monthly savings.

Table 6

Savings Resulting from Unlimited Monthly Surfing Rate

| | Unlimited Surfing | |
|---|-------------------|-------|
| Number of persons surfing more than 40 hours per month | 230,000 | A |
| Difference in monthly cost, per 40 hours ^(a) | \$3.20 | B |
| Total savings to heavy surfers | \$736,000 | S=B*A |

a. For Bezek rates, see table 4.

In table 6, only 40 hours of surfing was used to calculate savings, though obviously many people surf more and save more. The table shows that by being enabled in March 2000 to connect to the Internet at a monthly rate for unlimited monthly surfing, Israeli surfers/consumers saved at least \$736,000.

The decrease in the costs of frame relay (see table 5) probably stems from the fact that in 1998, this was the sole form of connection offering the high surfing speeds a business requires. In 2001, with the advent of Bezek's ADSL technology, businesses could choose to hook up at higher speeds and lower rates using ADSL. Today, businesses can connect using ADSL at a cost of \$220 per month.³³

In terms of the cost for dial-up telephone connections, since 1998 there has been an increase in Bezek's rates for single call units, compared to a decrease in the rates charged by Internet service providers. The different trends reflect the different markets in which Bezek and the Internet service providers operate: Bezek operates in a monopolistic market which it controls, and the price is accordingly rising, while Internet service providers operate in a competitive market, and the price is accordingly dropping.

Bezek's rates rose from \$44 to \$63 (per 100 hours), while the payment to the Internet service provider dropped from \$37 to \$17.

Consumers especially benefited from the recent introduction of an unlimited monthly surfing rate. Without this option, surfing 100 hours would cost a total of \$90 per month (including payments to Bezek per call units and the Internet service provider) instead of the current \$49.

Damage to the Israeli Economy

Policy Studies 43 estimated the total damage to the Israeli economy as a result of slow data transmission on the Internet in Israel and the high usage price at a minimum of \$100 million.

This estimate was based on an analysis of the economic implications of the surfing speed, where the other parameters are fixed.³⁴ Etzioni correctly predicted that an increase in the volume of activity in the Internet market would mean far greater damage than the estimate given in *Policy Studies 43*.

This *Update* will now assess the most recent costs of Israel's Internet policy. In 2001, the damage to the Israeli economy and to Israeli surfers resulting from slow data transmission and from high surfing prices can be estimated at \$160 million. This estimate takes into consideration Internet hook-up by dialing and broadband hook-up using Bezek's ADSL.

As noted, in 2000 the Ministry of Communications gave Bezek permission to provide broadband using ADSL, thereby conferring on Bezek a broadband monopoly. The

nonimplementation of the recommendations of *Policy Studies 43* and the creation of a new Bezek monopoly have caused serious economic losses.

The quantification of the damage in 2001 will make use of the methodology of *Policy Studies 43*, while revising a number of premises:

Premises

1. *Speed and price of Internet use:* In 1998, the premise was that surfing speed was 50 percent of what it could have been in a competitive market structure, while the price was double a competitive market price. This premise will be maintained in order to arrive at a conservative estimate of the economic damage.³⁵

At the same time, it should be noted that if competitors (such as Eurocom) had obtained approval for the provision of broadband services and were competing with Bezek, broadband fees would decrease and Israelis would be surfing more than twice as fast as Bezek allows.³⁶ Israel lags behind the developed world where broadband is concerned.³⁷

2. *Number of surfers:* The number of surfers or persons connected to the network stood in 1998 at 260,000 regular and another 100,000 random hook-ups. In 2001, it was estimated that there were 956,000 active Internet users in Israel, slightly less than four times the number in 1998, with a total of 1.93 million people who have access to the Internet. Random hook-ups in 2001 were estimated at 314,000-1,000,000; the lower number, 314,000, will be used below to ensure a conservative estimate.³⁸

3. *Average surfing hours per surfer per month:* Data assembled by the Ministry of Communications indicates that 40 percent of users surf up to 16 hours per month, and 23 percent surf over 40 hours per month. The average surfing time is between 22.5 and 31.33 hours per month. We will assume the more conservative 22.5 hours. Average hours of use by occasional surfers were conservatively estimated by the ministry at 4 hours per month.³⁹

4. *Download time:* Since up-to-date data on download time is not available, for purposes of comparison, an average download time identical to that in 1998, i.e., 17.5 percent of surfing time, will be used.⁴⁰

Table 7 calculates the economic losses to Israeli surfers and to the economy as a whole from slow communications. Alongside each of the figures in the table is an indication of how it was calculated.

In 2001, surfers in Israel were caused losses amounting to \$40 million as a result of slow Internet data transmission, expressed in the waste of more than 24 million hours spent unnecessarily downloading. The damage in 2001 was almost four times as high as the estimated damage in 1998. The sharp increase derives from the higher number of users in Israel, showing that, despite high prices and poor surfing quality, demand for Internet is growing.

Research shows, however, that the increase in the number of new subscribers slowed in 2000 compared to the preceding year.⁴¹ Accordingly, had the sector undergone the reform proposed two years ago, surfing quality would presumably have been better, the number of users in Israel would have been higher and Internet and broadband penetration percentages would have been higher.

Table 7
Economic Losses to Surfers from Slow Download

| | 1998 | 2001 | |
|--|--------------|--------------|-----------------|
| Number of surfers ^(a) | 260,000 | 956,000 | A |
| Monthly average of usage hours per Israeli surfer ^(b) | 25 | 22.5 | B |
| Number of casual Internet surfers ^(a) | 100,000 | 314,000 | Z |
| Monthly hours in random surfing | 416,667 | 1,256,000 | 4Z |
| Annual surfing hours | 82,064,004 | 273,192,000 | $T=(A*B+4Z)*12$ |
| Percentage time dedicated to downloading ^(c) | 17.5% | 17.5% | C |
| Annual volume of hours dedicated to downloading | 14,361,201 | 47,808,600 | $D=T*C$ |
| Volume of damage in terms of hours per annum (assuming surfing speed 50% lower than in free market) ^(d) | 7,180,600 | 23,904,300 | $E=D*50\%$ |
| Average cost per surfing hour in Israel (Internet service provider + single call unit charge) ^(e) | \$1.5 | \$1.63 | F |
| Annual damage deriving from superfluous download time | \$10,770,900 | \$38,964,009 | $L=P*E$ |

- a. See premise 2.
- b. See premise 3.
- c. See premise 4.
- d. See premise 1.
- e. See table 4.

As shown in table 7, 24 million hours and \$40 million are wasted downloading material from the Internet at a surfing speed slower than the speed that would exist in a competitive communications market. At least 30 percent of that time comes at the expense of work hours contributing to Israel's GDP, while the balance comes at the expense of leisure hours. These rates, multiplied by their economic value, will give the figure for the total damage to the economy.⁴²

Table 8 calculates the damage resulting from Internet surfing time wasted on the slow downloading of data (some 17.5 percent of surfing time). The cost is based on data from the Ministry of Finance's Budget Division, which calculated the value of an average work hour and an average leisure hour per person in Israel.⁴³

Table 8
Annual Losses from Lost Work and Leisure Hours
Resulting from Slow Download

| | 1998 | 2001 | |
|---|---------------------|----------------------|--------------|
| Losses in hourly terms (see table 7) | 7,180,600 | 23,904,300 | D |
| Losses in work hours | 2,154,180 | 7,171,290 | F=D*30% |
| Losses in leisure hours | 5,026,420 | 16,733,010 | G=D*70% |
| Cost per work hour | \$14.335 | \$13.59 | H |
| Cost per leisure hour | \$1.393 | \$1.36 | I |
| Indirect loss to economy resulting from lost work hours | \$30,880,170 | \$97,436,005 | J=H*F |
| Indirect loss to economy resulting from lost leisure hours | \$7,001,803 | \$22,735,068 | K=I*G |
| Total annual damage to economy deriving from lost work and leisure hours | \$37,881,973 | \$120,171,073 | N=J+K |

In 2001, the indirect annual loss to the economy from lost work and leisure hours was about four times higher than in 1998, and was a minimum of \$120 million.

Cost of ADSL Internet Surfing

As noted, after Bezek was given approval to provide broadband services, Antitrust Commissioner Tadmor announced that Bezek was now a monopoly in broadband services, too. The direct result of the provision of broadband services by a monopoly finds expression in high broadband surfing prices and poor quality. NonStop General Manager Eyal Yaniv says:

A situation has come about in which Bezek's ADSL prices are at a level unparalleled in the world and there is no quality assurance. The package costs about NIS 350 [\$82]. The most expensive packages globally are close to \$80, but include assurances of high bandwidth and high quality.⁴⁴

It is worth examining the damage to the Israeli economy resulting from broadband surfing prices that are higher than the prices that would apply in a competitive market. Table 9 calculates the damage to the Israeli economy resulting from high prices for connecting to Bezek's broadband service.

The underlying premises of this calculation are:

1. *Number of ADSL connections:* Ministry of Communications data indicates that the number of ADSL connections in 2001 stood at 38,000.⁴⁵
2. *Monthly usage fees:* For broadband service, a subscriber must make two payments: a fixed payment to Bezek for ADSL infrastructure (monthly fees are \$35); and payment to the Internet service provider (fees are an average \$57 per month).⁴⁶

3. *Broadband fees in a competitive market:* In countries where there is a competitive broadband market, a subscriber makes one payment for his ADSL package, consisting of \$40-\$50 payable to the Internet service provider. The Internet service provider is, in turn, liable for payment to the infrastructure provider, and the consumer need not pay an additional separate charge for use of the communications infrastructure. For purposes of calculating the amounts involved, the highest monthly payment of \$50 will be used.⁴⁷

Table 9

Losses from High Broadband Prices (2001)

| | | |
|---|--------------|--------------|
| Number of ADSL connections | 38,000 | A |
| Monthly usage fees to Bezek | \$34 | B |
| Monthly usage fees to Internet service provider | \$57 | C |
| Competitive price | \$50 | D |
| Monthly cost resulting from ADSL surfing | \$41 | $E=(B+C)-D$ |
| Annual cost to ADSL surfers in Israel | \$18,577,870 | $T=(E*12)*A$ |

Losses in 2001, in which ADSL lines account for a very small percentage of total Internet connections in Israel,⁴⁸ are approximately \$20 million. As the number of surfers connected to ADSL rises, the losses will increase proportionately unless the market undergoes a reform. But if the price were to decrease and the service improve, even more money would be saved.

Table 10 calculates total losses from lost work and leisure hours and from high broadband prices.

In addition, it should be noted that the penetration rate of broadband in Israel is very low because of the high cost and poor quality. Only very wealthy people or persons whose employers pay for their connection are able to hook up to the Internet via ADSL.⁴⁹

Table 10

**Total Losses to Internet Surfers and the Economy
(\$, 2001)**

| | | |
|--|-------------|------------|
| Cost of lost work and leisure hours | 120,171,073 | N |
| Losses to ADSL surfers in Israel | 18,577,870 | T |
| Cost of superfluous surfing hours | 19,482,005 | 50%L |
| Total loss to Internet surfers and economy | 158,230,947 | $TD=N+T+L$ |

Sources: See tables 7, 8, 9. Assuming that in a competitive market the speed would increase and the price would fall, the cost of superfluous hours has been estimated at half today's cost of \$38 million (see table 7). The theoretical loss is therefore nearly \$160 million. In reality Israelis continue to pay inflated prices, and so the real loss is closer to \$200 million.

The total loss to Israeli surfers and to the economy in Israel stood, in 2001, at a minimum of \$160 million.

Beyond these losses noted above, the absence of an advanced, efficient communications sector in Israel causes damages, including loss of economic potential, the widening of the “digital gap” in education, and more. Minister of Communications Reuven Rivlin has stated:

Successful regulation is regulation that fosters technological development, which establishes game rules such as to facilitate fair, decent and genuine competition, which manages to cut needless red tape....The communications world is not waiting for us, but is galloping forward. It does not wait for laborious legislative processes, for cumbersome apparatuses, for historic monopolies or the resolution of disputes among bureaucrats. Anyone who fails to realize this — will simply remain behind.⁵⁰

Loss of Economic Potential

Both small and large businesses are suffering from the economy’s failure to assimilate information technology, causing a waste of resources and loss of productivity, which causes an overall drop in GDP. The production capability of companies engaging in Internet and its uses, their ability to compete with similar companies in other countries, and the feasibility of manufacturing for the domestic market are all affected. At this time, it is evident that companies of all types in Israel are being harmed. The monopolistic structure of the communications sector, the manner in which it is regulated and the resultant high prices are preventing commercial companies of all kinds from making use of broadband communications and blocking immediate information access.

A dearth of immediate access to information in any business organization has a number of effects. First, among management, decisions are taken that are not based on complete information and are therefore of poorer quality. Second, there is a loss of productivity on the part of those working from home, who must waste a great deal of time downloading material instead of using that time on actual work. And third, a task whose implementation is complicated because of lack of access to appropriate broadband communications will either not be carried out properly or will not be carried out at all. Lior Barkan, general manager of the Zro’ot Barkan plant, has defined this third factor in terms of the notion of the “feasibility effect”:

The feasibility effect finds expression on the feasibility scale of tasks such that, at one end, the task is impossible, and at the other end, the task is possible. When a task is too complicated or consumes too much time, I will not carry it out. Broadband communications moves many tasks from the realm of the “impossible” to the realm of the “possible.”⁵¹

The Widening of the Digital Gap

The digital gap expresses the differences between the various population strata in terms of access to advanced technology. The assumption is that citizens of a higher socio-economic

status have better and more immediate access to information technology than do citizens of a lower socio-economic status, who have little or no access to such technology.⁵² One thing that the difference in access creates is an ever-widening gap between various population groups. The digital gap affects a person's social and economic advancement.⁵³ Minister of Communications Rivlin describes the effect of the digital gap:

One of the leading indices, one of those that are coming to be perceived as central to the measurement of the living standard in the new age, is the information access index. A child who does not have broadband service available to him in school and at home will also be a child whose prospects of earning an academic degree are diminished. And his living standard as an adult will be lower than that of a child who has freer and more readily available access to information.⁵⁴

Beyond that, an Israeli's daily life is adversely affected by the nonrealization of broadband communication applications, such as for purposes of distance learning, telecommuting, medicinal applications and so forth.

The cause of this damage is the failure to utilize the available technology and allow it to penetrate a society and markets that want to use it. Proof that the residents of Israel are ready and willing to adopt these technological innovations is the fact that Israel is one of the world leaders in the rate of cellular communications penetration (80 percent of the population) and the rate of connection to cable television (90 percent).⁵⁵

Accordingly, the Israeli economy suffers from direct damage of some \$160 million, and further damage caused by injury to both the business and the private sectors. The damage derives from the absence of competition in the local communications market and the lack of competition in broadband services.

Conclusions

Israel has a stalemated communications sector with a low level of competition which drops to zero in certain fields, along with a great deal of oppressive government involvement. This results in high prices and poor service quality. The cost to the Israeli economy of the state of affairs outlined in this *Update* is much higher than that indicated in the 1999 *Policy Studies*, and may be expected to increase, with the attendant damages in tandem, unless and until reform is instituted in the communications market. Had the recommendations of *Policy Studies 43* been put into effect, they would have translated into hundreds of millions of dollars of savings to the citizens of Israel. The policy recommendations listed below will result in tremendous savings, will rationalize the economy and lead Israel, with its wealth of human capital, to take advantage of its competitive edge. Israel's regulators are well aware that regulation is delaying the development of the communications market, as noted by Minister of Communications Rivlin:

I have already learned that regulation is easily liable to become an obstacle, a factor delaying the pace of technological developments rather than bringing their glad tidings to every home and every citizen in Israel. Even when replete with the purest of intentions, regulation is sometimes liable to put a spoke in our wagon wheels....A wagon whose

wheels have become mired in a morass of cumbersome legislation, which has slowed its speed because of economic short-sightedness, or that has simply overturned – is obviously of no use to anyone.⁵⁶

The requisite reforms are:

1. *Supervision*: Israel should adopt the recommendation of the Boaz Commission which was formulated in 1996: dismantle the Ministry of Communications and replace it with a statutory licensing, control and enforcement authority in the communications sector, along the lines of America's FCC (Federal Communications Commission).⁵⁷ The current minister of communications, Reuven Rivlin, is aware of the implications of government involvement in the communications market and maintains that his role, as regulator, ought not to find expression in intervention in the game. His role should be merely to establish "game rules," meaning that the regulator should function as a supervisory and licensing entity.⁵⁸
2. *Competition in domestic segment infrastructure*: Competition is at a low level today. As noted, Bezek is actually a monopoly in the field of domestic communications infrastructure. Ofek – The New World was granted an operator's license but was never given frequencies for the transmission of communications. The company closed after declaring bankruptcy. Also, Amendment 25 to the Bezek Law, enacted in July 2001, theoretically granted operator licenses to cable companies, but was not put into effect then, and the cable companies are only now beginning to be able to transmit broadband services.

In addition, concerns that do not operate in the communications market but which own domestic communications infrastructure, such as Israel Railways and the Israel Electric Corporation, should be permitted to enter the market. These concerns are generally themselves state corporations, and should be permitted entry into the communications market parallel to being privatized. Cross-subsidization should be avoided. At the same time, state ownership should not prevent them from being active in the communications market.⁵⁹

Another recommendation is that use of new technologies be permitted. As stated, Bezek obtained approval for transmitting communications and broadband Internet by means of ADSL technology, as recommended by *Policy Studies 43*, but the recommendation to allow use of the cable infrastructure technology known as "cable modem" was not allowed.⁶⁰

Another recommendation in this regard includes equal access to monopoly infrastructures. In *Policy Studies 43*, Etzioni recommended enabling any Internet service provider wishing to use a state monopoly's infrastructure to obtain this service from the monopoly. This would enable fair competition between Internet service providers that are subsidiary companies of state monopolies, such as Bezek International Internet, and Internet service providers that are not subsidiary companies of monopolies. This issue is addressed in Amendment 25 to the Bezek Law, under the heading "Access to the network and use of another's telecommunications facility."⁶¹ This clause refers to the issue of unbundling,⁶² and partially adopts the above recommendation, but leaves the issue to the discretion of the minister of communications. Leaving the matter to the minister of communications' discretion instead of

laying down binding directives, paves the way for monopolies and other vested interests to exert pressure and win concessions. It would be preferable for the right of access and use of a state monopoly's telecommunications facilities to be required by law, so that new competitors are in any event enabled to use existing infrastructure.

By way of comparison, the Telecommunications Act enacted in the United States in 1996⁶³ required the Bell companies, which constituted a monopoly in the field of local communications infrastructure (within the individual states), to facilitate full access and use of their infrastructures by competing companies. It was because of the Act that competitors to the Bell companies arose.⁶⁴ Their contribution to the communications market was reflected in a leap of 75 percent within a mere six months in the penetration rate of ADSL broadband provided by the Bell companies and their new competitors.⁶⁵ One may safely assume that if access to infrastructure were required by law in Israel, the result would be a higher broadband penetration rate and lower prices. It is important to note that even though in the United States the issue of placing companies under this type of obligation raised controversy over government intervention in the market,⁶⁶ in Israel there are no grounds for controversy, since the market is controlled by a state monopoly built with taxpayers' money.

A further recommendation is that the restriction on mergers be lifted. There is a need for reduced government involvement in corporate structure. At the same time, in the case of state-owned companies, restrictions should not be lifted until after they are privatized. Amendment 25 to the Bezek Law refers to this issue but does not contain any unequivocal determination permitting cross ownership, referring the matter, once again, to the discretion of the minister of communications.⁶⁷ As of yet, the merger of the cable companies has not been approved. The cable companies should be allowed to merge so that they can commence providing domestic communications services.

3. *Competition in international infrastructure segment:* **Policy Studies 43** recommended canceling access fees payable to Bezek, which international communications concessionaires have been required to pay in order to subsidize Bezek's domestic communications; canceling concessionary royalties to the government, currently amounting to 5 percent of their total income, which result in consumer prices which are higher than market prices would be; and the opening of the international communications market to full competition. The date of expiry of the concession was set for January 2002; yet today, the international communications market is still not open to full competition, international communications companies still retain exclusivity, and new competitors have not been permitted to enter the market.⁶⁸ The international communications market must be opened to competition, and international operator licenses must be granted to any applicant financially strong enough to enter the market.

In addition to the aforesaid recommendations, certain policy recommendations related to broadband services should also be adopted:

- *The opening of broadband services to competition:* In December 2000, Antitrust Commissioner Tadmor declared Bezek to be a monopoly in broadband. No obstacles should be put in the way of the cable companies actually providing broadband services. Likewise, the

satellite TV company YES should be permitted to provide broadband services, and a frequencies tender should be issued immediately to enable Cellcom or any other company to enter the communications market and provide broadband services using the LMDS method, too.

The opening of the broadband services field to competition and the entry of new competitors who will offer various solutions to different population groups will bring about an increase in the penetration rate of broadband services and will promote growth among commercial enterprises.

- *Annulment of the universal service requirement in the frequencies tender:* The universal service requirement in the frequencies tender constitutes the principal barrier to the entry of potential rival companies, by dint of creating economic unfeasibility. Participation in the LMDS frequencies tender is contingent on a commitment to provide universal service to 15 areas, 3 of which are on the periphery. This condition is so economically unfeasible for companies taking part in the tender that they maintain they would prefer to make direct payment out of cash in hand to the residents of those areas, to give those residents their own Internet accounts with Bezek, rather than set up an optic-fiber-based wireless communications infrastructure for them.⁶⁹

The Ministry of Communications set this requirement because of its insufficient technological understanding. This requirement, in fact, is not only economically unfeasible in cost/benefit terms, but its satisfaction is also technologically impossible in certain peripheral communities, because of geographical circumstances.⁷⁰ The universal service requirement in the LMDS frequencies tender should be annulled.

Once the universal service requirement is annulled, market forces will operate. Wireless infrastructure companies will enter the commercial sector in industrial centers where there is a need and a demand for these advanced services,⁷¹ while the cable companies will enter the private sector, in households where a cable infrastructure is already in existence, and will compete with Bezek's telephone lines.

The communications sector as portrayed here has not shown any real progress in the past three years. Government ministries have made many promises, few of which have been fulfilled. In practice, Internet infrastructures have not noticeably improved in Israel and, as a result of the stalemate in the communications market, the economy has sustained economic damage to the tune of hundreds of millions of dollars. This damage has, in fact, almost doubled over the course of the years and may be expected to continue to increase with the passage of time, unless steps are taken to reduce government involvement in the market and unless full competition comes into play in the Israeli communications market.

In December 2001, the Ministry of Communications director general said that total revenues from communication services were estimated for 2001 at \$5 billion, and the growth rate of revenues in the communications market alone was estimated at 6 percent, at a time when the growth rate of the economy as a whole was negative, minus 0.5 percent.⁷²

Recessions such as the one the economy has seen in recent years are the very time to facilitate the natural development of Israel's communications sector. If the recommendations outlined in this *Update* and in *Policy Studies 43* are adopted, the restrictions imposed on the factors that facilitate growth in the Israeli economy will be lifted. In that way, Israel will not only be a high-tech world leader in technological development and invention, as it is today; it will also be the world's most advanced society in the global information era.

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NOTES

¹ *Ha'aretz*, December 16, 2001 [Hebrew].

² B. Wellman, *Changing Connectivity: A Future History of Y2.03K.*, Sociological Research Online, vol. 4, no. 4 (2000), <http://www.chass.utoronto.ca/~wellman/publications/y203k/article.html>

³ The following table indicates the time differences for downloading files in accordance with various means of connection: narrow-band communications including connection by dialing at a speed of 56 kilobytes per second compared to broadband ADSL communication, cable modem and wireless communication based on optic fibers.

| Type of Internet hook-up | Dialing modem at a speed of 56 kilobits per second (currently the most common) | ADSL at a download speed of 8 megabits per second | Cable modem at a download speed of 27 megabits per second | LMDS at a (typical) download speed of 45 megabits per second |
|---|--|---|---|--|
| Download time for 25 megabit-sized software | 1 hour | 24 seconds | 7.1 seconds | 4.27 seconds |

Source: Amir Marom, manager of Economic Division in Bezek, letter to the author, March 2001 [Hebrew].

⁴ *Globes*, July 25, 1999 [Hebrew].

⁵ Bezek holds 30 percent of the shares of the satellite TV company YES. By December 2001 Bezek had injected into YES some \$150 million, even though the other shareholders in YES – Poalim Communications, the Kardan-Lidan group, Gilat DBS and Eurocom – refrained from putting money into the company, having concluded that their chances of realizing a profit over the next few years were not good. Bezek also sought to increase its holdings in YES in mid-2001 to 50 percent of the shares, for strategic reasons: YES was the cable TV companies' sole rival in the field of multichannel broadcasts and, therefore, the existence and activity of YES weakened the financial strength of the cable companies, which are potential rivals to Bezek in domestic communications and in broadband service.

⁶ Unbundling means that competing companies would be able to use Bezek's infrastructure in order to provide broadband services. There are two types of unbundling: full unbundling, known as co-location, and partial unbundling, known as Bit Stream access. The difference between the two is that the former

enables competing companies to use equipment positioned at the monopoly's sites, and to control the service terminal to terminal, while partial unbundling means that the monopoly leases infrastructure equipment to the competitor. The problem with this is that Bezek would still control the terminal and set leasing tariffs at a level that could liquidate the competitor. By comparison, in the United States, where full unbundling is practiced, equipment is leased out at a wholesale rather than a retail tariff, which is to say at a low fee, and prices to consumers are therefore lower.

⁷ Danny Rosenne, Ministry of Communications director general, interview with the author, January 23, 2001.

⁸ Minister of Communications Reuven Rivlin, speech, *Globes* Conference, Tel-Aviv, June 19, 2001, www.moc.gov.il [Hebrew].

⁹ *Ha'aretz*, *Globes*, *Yediot Aharonot*, *Jerusalem Post*; www.redherring.com, www.haaretz.co.il, www.globes.co.il, www.themarket.com

¹⁰ *Globes*, July 7, 1999.

¹¹ *Globes*, September 26, 1999; Local Multipoint Distribution Services – LMDS – a technology using the GHz 28 frequency, which necessitates a line of vision between two reception antennas. This technology is ideal for communities with a high population density where it is difficult and expensive to use linear infrastructures. Potential speed is 155 megabits per second, while typical speed is 45 megabits per second for downloading from the network, from one point to multiple points.

¹² Minister of Communications Binyamin Ben-Eliezer, speech, Israel Business Conference, December 13, 1999 [Hebrew].

¹³ The mayor obtained investors from General Dynamics and an entire plan was constructed for setting up a teleport project in Ariel. In April 1998, the mayor presented the plan to the minister of communications, the minister of industry and trade and the minister of science. Following the meeting, the minister of science wrote a letter to Ron Nahman expressing the ministers' enthusiasm with the idea, and noting the importance of the project, since Ariel would be not only an advanced industrial park but would also serve as a gateway for broadband information to other communities in and outside Israel. Ron Nahman, mayor of Ariel, interview with the author, June 20, 2001; Michael Eitan, then minister of science, letter to Ron Nahman, April 29, 1998, first version; Eitan, letter to Nahman, April 29, 1998, second version, corrected in the handwriting of the director general of the Ministry of Communications to modify the terms of the trial [Hebrew].

¹⁴ Rivlin, speech.

¹⁵ Zvika Shchori, deputy general manager for research and technological ventures at Cellcom, interview with the author, January 18, 2001.

¹⁶ Amit Schechter, legal advisor to Cellcom, interview with the author, March 13, 2001.

¹⁷ Amir Graf, Golden Channels Internet manager, interview with the author, January 23, 2001.

¹⁸ Attorney General Elyakim Rubinstein, *Decision: Licensing for the Provision of Communication Services and Broadcasts by Means of Cable Infrastructure – Dispute Between Ministry of Communications and Ministry of Finance*, April 10, 2000, Jerusalem [Hebrew].

¹⁹ Ministry of Communications, *Policy*, <http://www.moc.gov.il/new/hebrew/indiex.html> [Hebrew].

²⁰ Ministry of Communications, *Licensing of the Provision of Communication Services and Broadcasts by Means of Cable Systems, Commercial, Competitive and Legal Aspects*, February 2, 2000, www.moc.gov.il [Hebrew].

²¹ Rubinstein, *Decision*.

²² Schechter, interview.

²³ Eyal Yaniv, general manager of NonStop, interview with the author, February 4, 2001.

²⁴ Graf, interview.

²⁵ *Globes*, November 25, 1999.

²⁶ *Ha'aretz*, December 16, 2001.

²⁷ *Globes*, July 6, 1999.

²⁸ Internet connection using dial-up telephone line. Over 95 percent of Israeli Internet surfers connect to the network via a dial-up telephone line. In other countries, too, most surfers connect to the Internet via dial-up telephone lines.

²⁹ Reference is to connection by Frame Relay at a data transmission speed of 64 kilobits per second.

³⁰ Israel Internet Association, *Modification of Telephone Charges for Internet Surfing – Position of Israel Internet Association*, April 2, 2000, <http://www.isoc.org.il/docs/2000-04-02-BezekPrices.pdf> [Hebrew].

³¹ Danny Rosenne, *Broadband Internet and Communications Presentation: The Key to the Economics of the Dawn of the Twenty-First Century*, May 17, 2001, www.moc.gov.il [Hebrew].

³² The monthly savings is calculated in the following table:

| Type of Payment (\$) | 40 Hours Surfing Using Dial-up Telephone Line | Unrestricted Surfing |
|---|---|----------------------|
| Payment to Bezek for single call unit | 25.20 | - |
| Fixed payment to Bezek | 10.00 | 32.00 |
| Fixed payment to access services provider | 17.25 | 17.25 |
| Total monthly payment | 52.45 | 49.25 |
| Difference in monthly costs | | 3.20 |

³³ Call-in customer service operators of the Internet service provider and of Bezek, telephone interview with the author, October 2001.

³⁴ All parameters are fixed except for the dollar exchange rate, which in December 2001 stood at NIS 4.416 = \$1.

³⁵ Amir Etzioni, *Internet Infrastructure in Israel: A Proposal for Reform*, Policy Studies, no. 43 (Jerusalem: IASPS, 1999), p. 18 [Hebrew].

³⁶ Yehuda Kelah, Ofek – The New World, vice-president for technology, interview with the author, July 11, 2001.

³⁷ Israel Manufacturers Association, Division of Economics, Department of Statistics and Economic Analysis, *E-commerce in Israel: The Role of the Government*, July 2001, www.industry.org.il [Hebrew].

³⁸ Statistics are not certain. Nielsen Net-Rating closed its branch in 2001. The most recent accurate numbers are therefore from December 2001. Teleseker/TNS, *TIM Survey Regarding Internet Activity in Israel*, December 2001, http://www.nua.ie/surveys/index.cgi?f=VS&art_id=905357429&rel=true, www.nua.ie/surveys/index.cgi?f=VS&art_id=90537161&rel=true; Rosenne, *Presentation*.

³⁹ Rosenne, *Presentation*.

⁴⁰ Etzioni, *Internet Infrastructure*, p. 19. Technological advances may have increased speed but they have also provided new software, applications and content which increase time spent downloading. In the U.S., downloading time is estimated at over 25 percent. We are using the more conservative estimate of 17.5 percent. See www.sims.berkeley.edu/research/projects/how-much-info/charts/charts.html

⁴¹ Teleseker/TNS, *TIM Survey*, January 2001.

⁴² Etzioni, *Internet Infrastructure*, figure 2 and table 5.

⁴³ Ofer Linczevsky, Ministry of Finance, Budget Division, telephone interview with the author, December 25, 2001.

⁴⁴ Yaniv, interview.

⁴⁵ Uri Olnick, Ministry of Communications director general, *Presentation: The Israeli Communications Market – The Various Communication Platforms, Data and Goals Toward 2002*, Israel Business Conference, December 3, 2001 [Hebrew].

⁴⁶ Amir Marom, manager of the economic division at Bezek, letter to the author, March 2001 [Hebrew]:

| Name of Supplier | Monthly Surfing Subscription (\$, including VAT) |
|------------------------------|--|
| Bezek International Internet | 59.6 |
| NonStop | 45.6 |
| Internet Gold | 58.3 |
| ActCom | 57.33 |

⁴⁷ ITU, *The Internet: Challenges, Opportunities and Prospects*, www.itu.int, May 17, 2001.

⁴⁸ Olnick, *Presentation*.

⁴⁹ Yaniv, interview.

⁵⁰ <http://www.moc.gov.il/new/hebrew/index.html>

⁵¹ Lior Barkan, general manager of Zro'ot Barkan, interview with the author, January 16, 2001.

⁵² Yaniv, interview.

⁵³ <http://www.isoc.org.il/conf2001/abstracts/2.htm> [Hebrew].

⁵⁴ <http://www.moc.gov.il/new/hebrew/index.html> [Hebrew].

⁵⁵ Minister of Communications Reuven Rivlin, *Address by the Minister of Communications in Anticipation of the Events of Telecom 2002*, http://www.moc.gov.il/new/documents/bout/sar/telecom_2002_heb.pdf [Hebrew].

⁵⁶ <http://www.moc.gov.il/new/hebrew/index.html>

⁵⁷ www.fcc.gov

⁵⁸ Reuven Rivlin, minister of communications, speaking at a press conference announcing the successful bidder in the News Channel Tender, April 17, 2001, http://www.moc.gov.il/new/documents/about/sar/lect_17.04.01.pdf [Hebrew].

⁵⁹ Etzioni, *Internet Infrastructure*, p. 30.

⁶⁰ Broadband transmission via cable infrastructure known as cable modem. This is the means by which a connection can be made to a cable television line for data transmission at a speed of 1.5 megabits per second. In most instances, cable modems are already installed in the cable company's digital converter. In the United States, the penetration rate of broadband using cable modem is higher than the penetration rate of broadband using the ADSL method, which Bezek operates in Israel.

⁶¹ *Bezek Law*, Amendment 25, section 12.

⁶² See footnote 6.

⁶³ *Telecommunications Act of 1996*, www.fcc.gov/telecom.html

⁶⁴ For further information on the development of local broadband competition in the United States see D.A. Wolcott, *An ALTS Analysis: Local Competition Policy & the New Economy*, February 2, 2001, www.alt.org

⁶⁵ L.G. Kruger, and A.A. Gilroy, *IBI0045: Broadband Internet Access: Background and Issues*, April 17, 2001, Congressional Research Service, Washington D.C.

⁶⁶ CLEAR Communications, *Ministerial Inquiry into Telecommunication: Reply to Responses to Draft Report*, August 2000.

⁶⁷ *Bezek Law*, Amendment 25, section 9.

⁶⁸ *Ha'aretz*, November 25, 2001.

⁶⁹ Shchori, interview with the author.

⁷⁰ Broadband technology by wireless method using LMDS and based on optic fibers necessitates a line of vision between two antennas. In many instances, in peripheral communities, the geography precludes such conditions, technically preventing any company from setting up wireless infrastructure in those areas.

⁷¹ http://www.idc.co.il/ts.cgi?tsscript=news/news_show&NewsID=48

⁷² Olnick, *Presentation*.

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