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Israeli cellular telecommunications policy

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Abstract

Recent research has emphasized the role of regulatory measures in the adoption of new technologies, specifically mobile telephony. This study describes in detail the three phases of cellular licensing in Israel. It surveys policy changes and questions their contribution to the public interest, while discussing their underlying objectives. It reveals a pattern by which Israeli regulatory policy has shifted from a public interest focus to a government interest/corporate interest focus.

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1. Introduction

The changes that have swept Israel's economy ever since the state was established have been described in scholarly works in quite dramatic terms. These descriptions include the transition from a "developmental state to a competition state" (Levi-Faur, 2000), the rapid transit from "developing country to post industrial country" skipping a period of stabilization (Sharkansky, 1987), and the more detailed "change from a socialist inspired mixed, highly centralized, highly planned state-centered, protectionist economy to a much more decentralized and internationally oriented neo liberal one" (Aronoff, 2001). Nowhere has this transformation been more evident than in the telecommunications industry—an industry once solely comprising a government—provided analog telephony service, criticized as "woefully inadequate" (Aharoni, 1991) to the extent that "it was virtually impossible to complete an intercity call in Israel during peak periods in the 1980s" (Gandal, 2002), to one which has developed over the course of 20 years into an industry which provides access to digital telephony and broadband Internet capability to virtually 80% of households over competing networks along with digital mobile phones. This transformation took place during a period of intensive policymaking activity. Indeed, the country's first telecommunications law was passed only in 1982, and since then it has been amended more than 25 times.

Economic development in general, and the transformation of the telecommunications market, in particular, have carried a social price tag, however, as the provision of telecommunications services has shifted from the hands of government-owned or operated monopolies, which in theory promote a public interest agenda, to businesses motivated by the bottom line. The costs of this transition have been an issue of concern for

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policymakers. Whether or not this transformation has served the public interest insofar as mobile telephony is concerned will be the focus of this paper.

Public policy has come to be guided by market principles in the new world of telecommunications—one dominated by private firms—and dictates that as large a proportion of the population as possible has access to new services, more for reasons of fairness of distribution of the public resource than for reasons of social equity (van Cuilenburg & McQuail, 2003). Nonetheless, policy should aspire to promote the universality of services at affordable rates (Daleiden, 1990). Although communications policy is also viewed as the appropriate platform for achieving other economic goals, such as reduced national deficits (by selling spectrum or levying sector specific taxes) and “jump-starting” the economy (through investment in infrastructure), it is the “communicative goals” of affordable access that should be the focus of communications policymakers. When exclusive use of spectrum and rights of way are awarded to operators through a competitive process because of the scarcity of resources, ensuring the availability of service becomes a paramount concern for communications policymakers, as they have traditionally been responsible for managing the spectrum.

2. Literature review: public interest, Israeli economics and licensing methods

2.1. Telecommunications policy, social outcomes and the public interest

Numerous factors may determine the levels and pace of adoption of cellular phones, in particular, and technologies, in general, prominent among them public policy, as international comparative studies have shown. Banerjee and Ros (2004) specifically pinpoint *cost of service and calling party pays* as significant policies affecting the rapid adoption of mobile technology in their study of 61 nations (which excluded Israel). They note that competition policy and the nature and extent of regulation—in particular policies such as “calling party pays” “the introduction of pre-paid services, and pricing—should be incorporated into an all-inclusive model of patterns of adoption. In addition, they argue that “uniform technological standards,” as well as “the promises of next-generation cellular technology,” can explain enhanced consumption of the technology. The regulatory requirement that these 3G technologies be deployed has been identified as advancing the deployment of W-CDMA or the equivalent CDMA 2000 3X technologies in Korea, making the transition from existing 2G technologies quick, as well as direct (Park & Chang, 2004). In Europe as well, as Gruber and Verboven (2000, 2001) have observed, public policy decisions were closely tied to the eventual diffusion rate of cellular technologies among consumers. They have also found, however, that *technology was more important than competition in determining the speed of diffusion* of mobile services, and that *competition only had a moderate effect on penetration*, both when duopoly and triopoly market structures served as models. Countries that adopted mobile technology relatively late, according to their study, exhibited faster initial penetration rates, but have yet to catch up with the leading markets. Some studies provide inconclusive evidence about policy effects on mobile telephone adoption. The impact of the fixed line network on mobile telephone subscription is debatable (Madden & Coble-Neal, 2003) and at least in Finland, Karine, Lauri, and Kalle (2004) report that cellular call tariffs and cellular phone prices were not significant predictors of cell phone diffusion.

2.2. Israel: economic and social transformation

A socialist non-liberal democracy (Doron, 1998) founded in 1948, “Israel’s economic regime has long reflected the conditions under which the state itself came into being” (Kleiman, 1997). Its economic infrastructure was inherited from the British colonialist regime, and so too was its telecommunication infrastructure and the fact that it was government-operated. The principles resembling those of a social democracy, upon which the state was founded, have been gradually replaced (Aharoni, 1998) ever since the political upheaval of 1977 that put in power a coalition with strong neo-liberal tendencies. Most of the literature pertaining to the policies of the *Likud* government elected that year focuses on the liberalization of the Israeli currency and the resultant hyperinflation (see for example: Plessner, 1994; Wolffsohn, 1987) which eventually brought about the economic stabilization program of 1985 and the establishment of a national

unity government. Less documented, however, is the fact that the first *Likud*-led government (1977–1981) sowed the seeds of a new telecommunications map for Israel. It was during the years of this government and its immediate successor, the second *Likud* government (1981–1984), that the recommendations of three public committees set up to address issues of communications policy were adopted: the Kubersky committee of 1978, which recommended establishing commercial television, the Bar Sela committee of 1982, which recommended setting up cable television and the Herzog committee of 1973, whose recommendation to corporatize public telecommunications was adopted by the government in 1979. While the first two media-oriented initiatives got off to a slow start due to fears (shared by socialists and liberals) that the government might lose control of the information flow guaranteed by a single television channel, the corporatization of telecommunications proceeded ahead 16 years after it was first recommended to a government led by *Mapai* (the predecessor of the Labor Party) which not surprisingly rejected the notion back then. In 1979, the government decided to establish a state-owned company responsible for providing telecommunications services (Gandal, 2003). The telecommunications law was passed in 1982 and Bezeq, the national telecommunications corporation, was formed in 1984 after a settlement was reached with the labor union that initially opposed the move.

The 1985 stabilization program marked a turning point in Israeli policymaking, being the first time that both dominant political parties concurred on what measures needed to be adopted to revive the economy: a move away from heavy government intervention and toward more reliance on market forces (Ben Bassat, 2002). This bipartisan consensus was evident as well in the “constitutional revolution” of the early 1990s that espoused the neo-liberal, individualist, “free enterprise” world view, one that the emerging modern Israeli economy has come to embrace (Hirsch, 1997). National policymaking was taken over by key ministers and technocrats—members of the Knesset proving themselves incapable of influencing policy and seldom making major changes in government proposals (Sharkansky, 1997). The technocrats were consequently able to launch a revolutionary neo-liberal change in policy, that was resisted only when it was perceived as undermining the benefits accrued to politicians by appointing their cronies to positions of power (Plessner, 1994; Rivlin, 1992). This change in policymaking culture was also characterized by improvisation, immortalized in the words of the slain Prime Minister Yitzhak Rabin as the “rely on me” culture (Sharkansky, 1999). Lacking a tradition of public policy and regulatory procedures, this closely knit group of bureaucrats handled its decision-making process without any rules of transparency, so that even in the case that internal disagreements may have emerged among them, they were united in their efforts to avoid public debate.

The second stage of telecommunications reform in Israel began in 1988, with a recommendation by First Boston Corporation, the US investment bank hired by the government to advise it on privatization, to sell Bezeq. This was accompanied by the liberalization of consumer premises equipment, private switchboards, mobile phones and international long distance services in accordance with the recommendations of the Boas committee, comprising the head of the budget office, the director-general of the ministry of communications (MOU) and the chairman of Bezeq, in 1991.¹ It was the second Yitzhak Rabin government (1992–1995) that was behind the cellular “revolution,” one that embraced the emerging characteristics of Israeli policymaking: neo-liberal economics and technocratic domination. As this study demonstrates, together, they led to the change in licensing policy that in the course of 15 years saw four commercial cellular licenses awarded and a cellular system installed in the military, each in a different process. This was accompanied by a shift in the focus of policy from serving the public interest to serving government and corporate interests. The outcome has been a market that may have exhibited impressive penetration levels achieved in the early (public interest focused) stages but falls below accepted standards with regards to serving the public interest once penetration was achieved.

2.3. *The public interest standard in telecommunications policy*

The “public interest” is an elusive term, often evoked by governments and policymakers, and its role in telecommunications policy worldwide has been widely documented. Krasnow and Goodman (1998) provide

¹Previously two laws were passed that had telecommunications policy ramifications: The Broadcasting Authority Law in 1965 established public service broadcasting and the Wireless Telegraphy Ordinance in 1972 adapted the British colonial ordinance of 1937 into the Israeli law books. It was amended in 1981 to specifically block transborder television broadcasts from a ship stationed offshore.

an overview of its historical roots in the United States, where it emerged, while Fowler and Brenner (1982) explain the ideological shift in the focus of policy from fulfilling the public interest by referring to license holders as “public trustees” of scarce resources to doing so through “marketplace” mechanisms. The fundamental ideology of the public interest standard in Europe has been questioned in depth by McQuail (1992) and updated by van Cuilenberg and McQuail (1993) in light of technological convergence and digitalization. The latter propose a tentative model for a new paradigm in which the public interest is fulfilled by serving political, social and economic goals. As van Cuilenberg (1997, quoted in Burgelman, 2000) states: “The main goal of communication policy is free and equal access to a social communication system that diversely provides for the information and communication needs in society.” (p. 132)

The public interest standard has not been the subject of such a deep philosophical discussion in Israeli communications policy. In fact, when the telecommunications law was first enacted in 1982, the “public interest,” according to article 6 of the law, was only cited as grounds for the minister of communications to revoke a license. Only in 1996, in amendment no. 12 to the law, was the public interest added to the list of considerations in article 4 as one the minister should address when awarding a license. However, as the explanatory memorandum to amendment no. 12 reveals, this change stemmed from the government’s desire to uphold its right to appoint members of the security forces to Bezeq’s board of directors, even after the company was privatized. In other words, in this context “security interests” were equated with the “public interest.” The public interest factor in article 4 takes second place to the government’s interest, in the list of considerations that includes the applicant’s capability of providing the service and promoting competition.

2.4. Licensing methods: the auction, the beauty contest and the giveaway

One way of achieving public interest objectives is through the licensing of service providers. While in the past, licenses were awarded on a “first-come first-served” basis or by lottery in some countries (though never in Israel), the following two key methods of awarding licenses evolved with the expansion of the international cellular market: spectrum auctions—a method introduced in New Zealand in 1990 (Mueller, 1993), and comparative hearings, also known as “beauty contests” (Borgers & Dustmann, 2003).

The literature pertaining to these two methods is vast. Janssen (2004) has compiled a collection of both theoretical analyses and country studies of both auctions and beauty contests. Specific country studies of auctions have been conducted with respect to the earlier auctions in the United States (Cramton, 1997), as well as the later ones (Cramton, 2002), and with respect to auctions in India (McDowell & Lee, 2003), Nigeria (Lee, 2003), Germany (Ewerhart & Moldovanu, 2003), Holland (van Damme, 2003), and others. Comparative studies have tried to assess which method produces better results. Fontenay and Kiss (1999) argue that “the government’s stress on economic efficiency justifies the use of auctions,” while Genty (2000) demonstrates that different outcomes are possible and dissimilar strategies are utilized when established carriers and new entrants compete. Comparative hearings, argue Bornshten and Schejter (2003), provide the government with more flexibility and an ability to adjust policies to market conditions benefiting both operators and consumers. Borgers and Dustmann (2003) conclude that the economic critiques of beauty contests are not always justified and that the “foundations of economists” advice regarding licensing methods needs to be improved by further theoretical and empirical research” (p. 258). Melody (2001) joins critics of the most concentrated auction effort, the 3G spectrum auctions in Europe between 1999 and 2001, arguing that they have resulted in artificially created spectrum scarcity because of poor management. The debate, therefore, continues.

3. Methodology and research questions

This study provides a historical description of the evolution of mobile telephony policy in Israel that demonstrates how communications policy paradigms shift. Although it employs the terminology of van Cuilenberg and McQuail’s (2003) analysis, it does not necessarily identify the same shift they found in Europe in Israeli policymaking, perhaps because this study focuses on mobile phone policy, while theirs takes a broader view of the new paradigm, addressing media policy goals as well. This study presents in detail the

terms for provision of cellular licenses in Israel and assesses the outcome of policy in two spheres: what emerges as the underlying theory of the “public interest” and whether the public interest was served, with connectivity (penetration rates) serving as the main benchmark, as access to the communications system should be the ultimate goal of governments. Indeed, usage is another indicator of access. The optimal level of usage, however, is impossible to define. Patterns in change of usage will be described and used to explain distortions in the market structure, the conclusion not being, however, that enhanced cell phone use should be a policy objective.

Penetration is described using official data published by two branches of the Israeli government: the MOC and the [Central Bureau of Statistics](#). In order to provide a relevant comparative angle, ITU and Merrill Lynch data regarding penetration levels and minutes of use in other countries are cited as well.

It is impossible to pinpoint one reason for the outcome of a policy. It would be intellectually presumptuous in particular to assume causality between policy and outcome as its only reason. There are competing explanations for the phenomena described in this study that pertain to consumer adoption of mobile communication technology. It is possible to explain them through diffusion theory using [Rogers’ \(2003\)](#) classic model or through social psychological characteristics attributed to Israelis, in particular with regard to their patterns of adopting technology such as television ([Schejter, 1996](#)), VCRs ([Cohen & Cohen, 1989](#)) and cable television ([Weimann, 1995](#)). This study assumes that policy may have affected the behavior. References to studies conducted in other countries that identified specific policies and associated them with market outcomes described in the preceding literature review will be made to highlight their validity in the Israeli case. There may be a connection between policy and the adoption of technology, and there should be a government policy ensuring access for all as a social goal. Herein lies the importance of the questions raised in this study:

- (1) Under which policies were mobile telephony licenses awarded in Israel?
- (2) How was the penetration rate affected after each license was awarded?
- (3) What can be learned from the licensing of mobile telephony in Israel with respect to:
 - (a) the underlying definition of the public interest in communications policy, and
 - (b) the efficacy of specific policies within the changing definition.

4. Licensing policies

4.1. 1986: the “pelephone” license

The 1987 cellular telephone tender was the first public tender of a telecommunication license, taking place at an early developmental stage for both the technology and the change in political culture. It did not garner much public or commercial interest. Eventually, political compromise led Motorola Israel, the local representative of Motorola Corporation, to establish together with Bezeq in 1986, the Pelephone Communication Corporation which became the country’s first cellular operator.

Pelephone was an advanced mobile phone system (AMPS) operator, the American-based analog technology of the time, even though Israel is situated in the European Region as designated by the International Telecommunications Union.² As a result, Pelephone Communications was designated bands within the 800 MHz range, while within the region, the 900 MHz band was to be dedicated to mobile telephony. In the early 1990s, Pelephone Communications upgraded its technology to the more efficient narrowband advanced mobile phone system (N-AMPS). Another policy imported at the time from the United States was “mobile party pays,” a policy that sees the mobile phone system as a dispatch service and therefore charges both the initiator and receiver of the call, since they are both making use of the spectrum. Unlike its counterparts in the United States Pelephone was awarded a unique designated area code. It was also promised exclusivity until 1994.

²The third and so far final stage is the introduction of competition to fixed services. It is still in its infancy regarding telephony, but rather developed regarding broadband access.

4.2. 1993: the “cellcom” license

In March 1993, as part of the deliberations over the introduction of a competitor to Pelephone, the MOC decided to make further use of the 800 MHz range, one major consideration being its belief that the deployment of the American-based time division multiple access (TDMA) technology, operating in that range, would allow subscribers to use dual mode phones and switch between Pelephone and the new carrier (Teitelman, 1994, p. 84), as the FCC standard dictated.

The 1993 tender was the first in which direct competition between two operators of a comparable service was introduced. At an early stage in the tendering process, the tender committee changed Pelephone’s license and subsequently introduced to the tender offering what was then considered the novel idea of “calling party pays,” in which mobile phones are regarded as a telephone service and the initiating network bears the whole price of the call.

Participation in the tender was limited to corporations in which at least 25% of the shares were held by an international operator who serviced at least 100,000 customers elsewhere. The decision was to be based on the following scoring table:

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- | | |
|----|---|
| 1. | Price to the final consumer—50% of the score |
| 2. | Timetable for digitalization—25% of the score |
| 3. | Timetable for territorial coverage—20% of the score |
| 4. | “Overall impression”—5% of the score |
-

Cellcom, the winning bidder, offered to charge no connection fees for the first 5 years, compared with the \$150 charged by Pelephone, as well as no monthly subscription fee for 2 years, as compared with the \$25 charged by Pelephone. The price to the consumer of the winning bid was only 6.5% of Pelephone’s existing prices, according to the government formula (Teitelman, 1994, p. 86). The first year’s peak airtime price per minute was set at \$0.025, one-tenth of Pelephone’s. Indeed, this price per minute, which was merely one-fourth to one-third of the European and US rates at the time, forced Pelephone to reduce rates by one-third (still far higher than Cellcom’s), thereby transforming the Israeli cellular market (Gronau, 2002).

4.3. 1997: the “partner” (“orange”) license

The 1997 tender applied to the provision of cellular services on the 900 MHz band, and consequently for the deployment of the European-based global system for mobile communications (GSM) technology. This decision underscored the government’s view that European technology was superior, not to mention the fact that the incompatibility of the assignment of “American” spectrum with television and cellular systems in neighboring countries left virtually no spectrum available in this range. The new tender established different criteria for choosing an operator than the previous one (Ministry of Communications, 1997). The formula for calculating the winning bid was set at:

1. One time license fee—75%.
2. Consumer and marketing evaluation—5%.
3. Engineering evaluation—10%.
4. General evaluation (regarding consistency and reliability of the offer)—10%.

The pre-qualifying requirements were:

1. The bidding corporation will be owned by an established operator or a corporation with a controlling stake in an operator that has a minimum of 500,000 subscribers.
2. Technology: a digital system in all coverage areas of the service, utilizing a proven technology, operating successfully in the world, for a duration exceeding 1 year, and serving more than one million subscribers.

3. Deployment rate: service coverage, within 12 months, in an area in which 35% of the population lives; within 24 months in an area in which 70% of the population lives; and within 48 months in an area in which 90% of the population lives.
4. Service quality: a maximum of 2% dropped and blocked calls 99% of the time.

It cost Partner Communications, whose major shareholder was the Chinese-based Hutchison Whampoa Corporation, \$400,000,000 to obtain the license.

4.4. 2001: the “MIRS” (“amigo”) license

Prior to the 1997 tender, the MOC began the process of introducing a third operator without a tender, by allowing the MIRS Corporation, an operator of a dispatch service, to upgrade its system to a full-fledged iDEN cellular network. Cellcom petitioned the High Court of Justice to prevent this non-tendered process. The eventual compromise reached in the court required MIRS to supply cellular services only to dispatch subscribers, to give the dispatch service preference over the cellular service (thus diminishing the cellular service’s quality and integrity) and to provide the cellular service over a “bridge” through a landline public exchange. The MOC, however, changed its policy 4 years later and in return for \$25 million, awarded MIRS a full-fledged general license to operate a cellular service without a tender. Partner’s petition to the High Court of Justice against this move was denied.

4.5. 2002: the UMTS licenses

While the government was busy defending its decision to award the MIRS Corporation a non-tendered license, it published a new tender at the end of March 2001, this time for a total of eight licenses: four for the deployment of digital networks operating in the 1800 MHz band (which would be a European GSM system) and four for the deployment of digital networks operating in the 2100 MHz band, which was to be utilized by the futuristic (at the time) European technology of UMTS (Universal Mobile Telecommunications System), also known as W-CDMA or more popularly as 3G. The reserve price for these spectrum assignments was set at the Israeli shekel (NIS) equivalent of US \$45 million and \$55 million, respectively.

In this most recent tender, published in 2001, the decisive consideration (after a list of prerequisites) was the price offered by the competitors for the license in a simultaneous ascending multiple round auction ([Ministry of Communications, 2001](#)). For lack of competitors other than the existing operators, however, it was over in one round. The “minimum requirement” obligations attached to the tender regarding the pace of deployment and maturity of the technology were left, once again, for the competitors to decide. Unlike the case in 1993, however, neither was calculated into a formula created to pick the winner, which was left for the highest bid to determine. Thus, unlike the case in 1993, following the auction this time, the government was left without any legal tools for enforcing deployment of the networks.

4.6. 2003/2004: non-tendered spectrum assignments

In February 2004, the government announced in a press release that a tender committee had been formed to award additional spectrum for cellular operators. The committee, according to the press release, was to establish guidelines for a tender for awarding additional spectrum in the 1800 and 2100 MHz bands. Six weeks later, on March 31, the government issued another press release announcing that Cellcom had been awarded spectrum in the 1800 MHz bands in an “expedited” process. No official documents regarding this tender were published, yet no protest of this rushed process was registered in the press or the courts.

The unofficial tradition of making consultations and tenders public—initiated during a consultation over spectrum allocation in 1993, which with the advent of the Internet in the 1990s became customary—was now eliminated altogether. With the absence of any legal tradition of consultations with the public, the centralized bureaucracy reverted to making decisions behind closed doors. From 2001 on, government technocrats conducted the auctions and tenders without the assistance of professional consultants, as had been the practice in the 1993 and 1997 tenders. The “rely on me” practice of keeping the public in the dark had been reinstated.

The last network to be installed in Israel to date is a secure cellular network for Israel's security forces. From information leaked to the public from Cellcom's Supreme Court petitions against this allocation of spectrum, it emerges that this military network will operate in the non-standard 900 MHz spectrum range (Landau, 2003), eliminating any possibility of future civilian use of this spectrum range, a range much coveted by GSM providers due to its superior indoor coverage quality over the 1800 MHz in which Cellcom operates.

5. The policy and its presumed effect on penetration

The Pelephone period: The price charged by Pelephone for its services was \$0.23 per minute of use (MOU), \$150 for the connection fee, \$25 for the monthly subscription fee and about \$1500 for the purchase of a heavy analog handset with frequent dropped calls (Teitelman, 1994, p. 83), with neither price nor quality of service subject to regulation. The ownership of a cell phone during Pelephone's monopoly (1987–1994) was considered a status symbol (Lemish & Cohen, 2002), with the penetration rate less than 2.5% (MOC figures quoted in Schejter & Cohen, 2002). In the summer of 1994, amid an effort to enlist subscribers before Cellcom's launch, Pelephone lowered its prices but was forced to stop registering new subscribers as its outdated analog service was in full capacity (Tokatly, 2000).

The Cellcom era: The cellular map changed dramatically in 1994. On the first day that Cellcom began providing service, consumers stormed its stores. The daily *Ha'aretz* reported that 53% of Pelephone subscribers were planning to switch to Cellcom within months of its anticipated launch in December 1994 (Belizovski, 1994). Although the transition was not as rapid as had been presumed, the market grew more rapidly than had been expected (see Fig. 1). Soon after its launch, the Cellcom network experienced serious technological problems that prevented calls at certain times. This may explain why Cellcom's rapid growth was accompanied by growth at Pelephone as well, even though the latter was still charging three times as much (per minute) for its service. By mid 1997, both operators had the same number of subscribers (700,000), and Cellcom took the market lead.

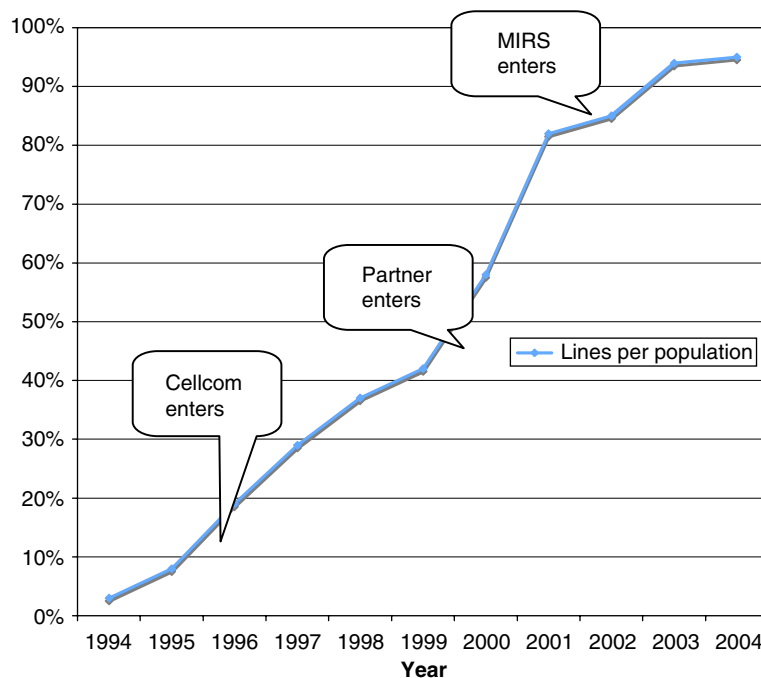


Fig. 1. Cell phone subscribers as ratio of total population (Sources: Ministry of Communications 1999; Ministry of Communications, 2002; Olenik, 2004).

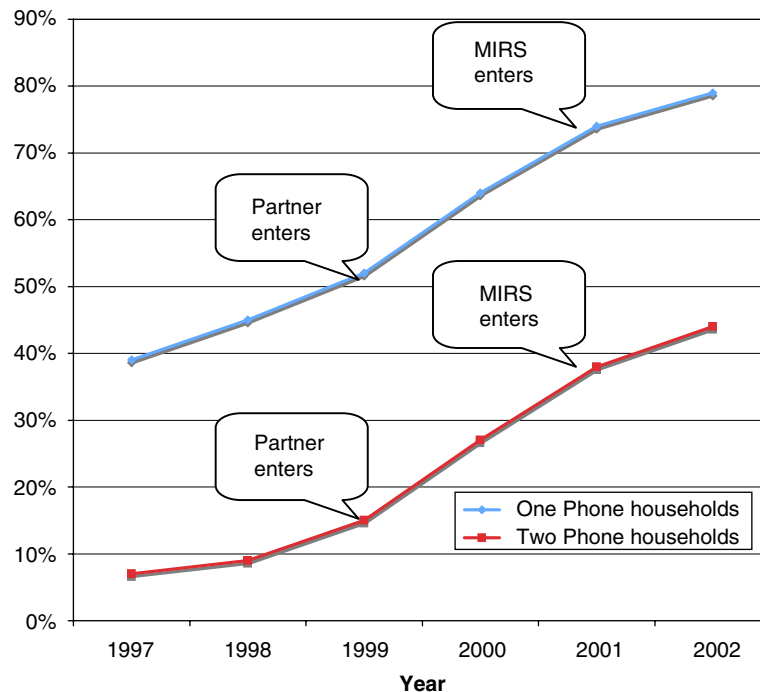


Fig. 2. Penetration rates by households (Source: Central Bureau of Statistics 1999–2004).

The Partner era: The success of Partner Communications, which capitalized on the international “Orange” brand, was perceived as more phenomenal than Cellcom’s, since it had entered what was considered a saturated market by many at the time who had not necessarily internalized the fact that additional services offered by the new operator, especially SMS capabilities and international roaming, had rendered Israel more than a local mobile voice market. Within 3 years, the penetration rate of cell phones had risen from 44.5% to 73.8%, with the share of households with at least two cell phones expanding from 9.2% to 37.7%. Hence, while the Cellcom “revolution” was about initial ownership of cellular technology, Partner’s was about the massive introduction of dual-phone households as well (see Fig. 2³).

Beyond introducing creative marketing schemes, such as a fixed tariff for both in-network and out-of-network calls, meant to overcome its inferiority in terms of the size of its network, Partner also deployed its superior technology in record speed, far ahead of the pace dictated in the tender.

The UMTS tender and the MIRS giveaway: The 2001 tender produced several “winners” and no losers. Both Partner and Cellcom bid for the 1800 MHz spectrum, (they were the only bidders) and won 10 MHz of spectrum for the reserve price, which Cellcom utilized soon thereafter to launch a new GSM network, while Partner utilized it to expand its existing network. Pelephone joined the other two in bidding for the 2100 MHz spectrum. Here again, with only three bidders competing for four licenses, they all won them around the reserve price after one round of bidding.

Cellcom launched a GSM network soon thereafter. Media reports had suggested the company was in dire need of additional spectrum, which may have motivated the launch of a new service utilizing a new technology (Horesh, 2001). But UMTS network launching lagged behind. Pelephone never launched this network but made progress toward launching a CDMA2000 1XEV network, the technological equivalent of UMTS, which operates in the 800 MHz bandwidth Pelephone already had. As such, the acquisition of the 2100 MHz spectrum was unnecessary. While Partner and Cellcom were each making claims to being the first to launch a UMTS network, neither deployed a nationwide network until Partner did so at the end of 2004. In mid 2005,

³It is also important to note that the 1980s mark a period of strengthening political ties between the US and Israel and a continuation of the “cold shoulder” both Israel and Europe were turning to each other.

4 years after the tender, Partner announced it had 35,000 UMTS subscribers, while Cellcom had yet to launch a nationwide network. As late as the summer of 2004, more than 3 years after it was awarded a general license, MIRS' market share still only stood at 4% (Olenik, 2004).

By mid-2005, four commercial Israeli operators and the government were utilizing 11 technologies based on spectrum allocations integrating European region standards, North American region standards and non-standardized networks, as demonstrated in Table 1, and awarded in almost every possible manner: through beauty contest, single bid, multiple round auction and giveaway.

It was only in 2001–2002 that a drop in fixed line subscriptions—from 94% to 91%—was registered. This can be explained by the transition of subscribers with designated lines for dial-up Internet access to broadband service, requiring only one line. The fact that there was no substitution between mobile and landline when the cell phone market took off may be explained by the difference in price in the two services. Although they adopted cellular technology with a vengeance, Israelis spoke on their fixed lines four times as much as they did on their mobile phones in 1998 (Gronau, 2002), MOC figures for the same year show that public expenditure on mobile and fixed line services were comparable at about 40% of the total expenditure on telecommunication services (Ministry of Communications, 1999). Similar MOC data presented in 2003 (Ministry of Communications, 2003) show that the share of cellular operators grew to 52% of the market, as local wireline income (not including Internet access) dropped to 24%. During the same period, the monthly MOU of cell phone users dropped from 448 min to 290 min (Merril Lynch, 2004). In countries with comparable GDP on a purchasing power parity (PPP) basis, the trend during the same time frame was very different: In Korea the MOU tripled, in Singapore it grew by 50%, and in New Zealand, Spain and Portugal it remained stable (Merril Lynch, 2004) (Fig. 3).

Table 1
Operators, technologies and spectrum allocation in Israel

Spectrum	Technology	Corporation	Year of operation
825–835 MHz and corresponding 870–880 MHz; 845–847 MHz ^a and corresponding 890–892 MHz	AMPS (American)	Pelephone	1987
Same as above	N-AMPS (American)	Pelephone	1992
835–845 MHz and corresponding 880–890 MHz; 847–849 MHz ^b and corresponding 892–894 MHz	TDMA (American)	Cellcom	1994
902.2–910.2 MHz and the corresponding 947.2–955.2 MHz exclusively and 910.2–912.2 and the corresponding 955.2–957.2 jointly with the Palestinian operator	GSM (European)	Partner	1999
Same as above	CDMA (American)	Pelephone	1999
810.9–812.9 MHz and the corresponding 855.9–857.9 MHz; 813–820.975 MHz and the corresponding 858–865.975 MHz exclusively ^c	iDEN (American)	MIRS	2001 (General License)
Cellcom: 1720–1730 MHz and corresponding 1815–1825 MHz; Partner: 1730–1740 MHz and the corresponding 1825–1835 MHz (both as of 2004) ^d	GSM (European)	Cellcom + Partner	2001
Same as above	CDMA2000 (American)	Pelephone	2003
Cellcom: 1960–1970 MHz and corresponding 2150–2160 MHz; Partner: 1940–1950 MHz and the corresponding 2130–2140 MHz (both as of 2004) ^e	UMTS (European)	Cellcom + Partner	2004
900 MHz range ^f	TETRA (non- standard)	Government	2004

^aThe term “ownership,” as it appears in Central Bureau of Statistics tables should be replaced with “possession,” as surveys in the late 1990s have demonstrated that two-thirds of Pelephone subscribers and 20% of Cellcom subscribers possessed cellphones provided by their employers.

^bAdditional 2 × 2 MHz awarded without tender in 1996 to both Pelephone and Cellcom.

^cSee previous footnote.

^dEighteen specific bands within this range were excluded from the exclusive use.

^eThe 2002 allocations following the 2001 tender were temporarily different, until 1 January 2004.

^fSee previous footnote.

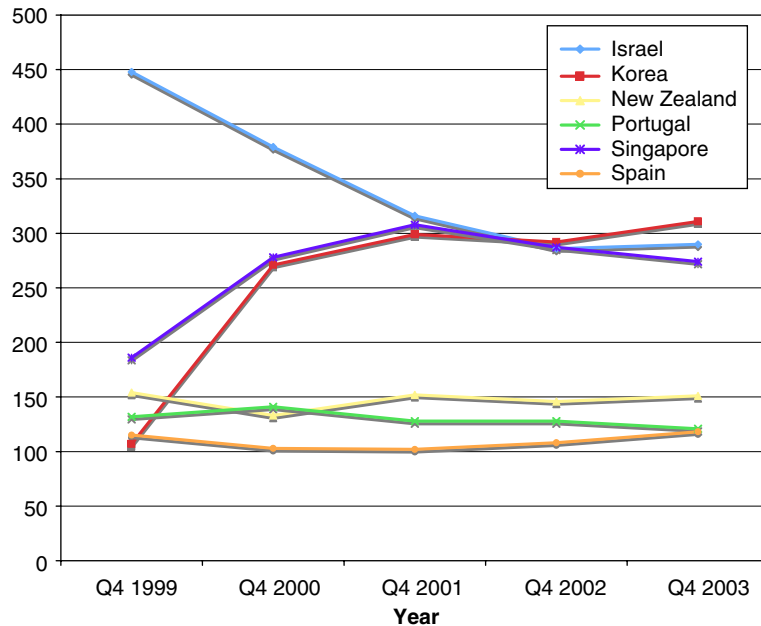


Fig. 3. Changes in MOU in countries with similar GDP/PPP (Source: Merrill Lynch, 2004).

Hence, while the public was talking less, the operators were attracting a growing share of the revenue in the telecommunications market. Certainly, the higher share of income of mobile operators could have been attributed to the proliferation of new income generators such as SMS. That does not change the outcome, however, which was that the mobile industry has taken full advantage of limited competition in the field, evolving into an oligopoly of mobile generated calls and a monopoly on mobile terminated calls. The latter did not go unobserved by the MOC, which in 2000 set a sliding scale for termination rates and in 2004 lowered them yet again, only significantly less than the recommendation of an international consulting firm. Yet again, the public was left out of the debate, which took place and was decided, within closed government circles. Still, with regard to the size of the emerging market structure, compared to other countries with similar GDP per capita on a PPP basis, Israel has more operators and a lower Herfindahl-Hirschmann score, for the mobile market (see Table 3).

6. A developing theory of the public interest

As previously mentioned, Israeli communications policymakers never held meaningful discussions about the public interest standard (at least not with public participation). Their ideological bias, however, emerges when studying the differences in licensing requirements that evolved over the years (Table 2).

Stage I—Focusing on the consumer interest: The 1994 license won by Cellcom demonstrates an underlying assumption that the public interest is best served by high penetration levels. Making the price of the service the determining factor and thereby achieving a price significantly lower than the going international rate shows that consumer welfare was a key concern of policymakers. This is quite remarkable considering that the public interest was yet to be introduced as a consideration in the telecommunications law. The government's insight in this case is even more impressive, since during this period, studies in the United States had found that in duopoly markets, regulation leads to higher, rather than lower, prices (Parker & Roller, 1997). Requiring the involvement of an international operator also attests to a policy centered on the public interest. Although well intended within this public interest paradigm, the requirement to set a deployment pace appears to be wasted. A novice operator entering a market in a country the size of Israel cannot compete unless it provides similar coverage to the established operator. The futility of this requirement, however, does not detract from its contribution to the public interest standard of the early 1990s and its focus on consumer welfare.

Stage II—a mixed consumer centered/government centered theory: Auctioning off the spectrum in a sealed bid not only creates excessive costs for the winner, in the form of a “winner’s curse,” but it also shifts the focus of the policy from the public’s interest to the government’s. The consumer ends up financing the license holder’s fee to the government, while the government incurs only the administrative costs of the tender, as it appropriates a public resource (the spectrum) and deems it its own. The change in the public interest paradigm, however, was only partial in this case, as the tender did include requirements meant to create a competitive market, most importantly by prohibiting cross ownership of the new licensee by any of the existing operators or their shareholders and by requiring that only a proven technology be utilized. Other measures, such as deployment rate and quality of service, although meant to serve the public, were superfluous.

Stage III: a government interest centered policy: It is hard to describe the policies by which the UMTS and iDEN licenses were awarded in any other way but that they centered on the government interest, as they contributed only to reducing the national debt and virtually nothing to consumer welfare. The awarding of the non-tendered iDEN general license to MIRS has had no positive or even observable impact on the market or on the welfare of consumers, as MIRS remained a marginal operation with only a 4% market share as late as 2004, as stated above.

The absence of a requirement in the tender for deployment of UMTS networks, a requirement prevalent in many tenders published in the same period, and a proven catalyst for 3G deployment (Park & Chang, 2004), contributed, undoubtedly, to the fact that by the end of 2004 Israel was lagging behind Asian and European countries in the deployment of UMTS technology. In the 2001 tender, it was clarified from the outset that existing operators were to be the main contenders. As such, the requirement for quick deployment, deemed superfluous in the 1997 tender in which novice operators participated, became necessary. The economics of quick deployment are not necessarily part of the considerations of existing operators. If the government regards the deployment of a new technology as important, it cannot rely on simple market mechanisms. A multi-layered approach should be utilized and flexibility should be maintained. In the case of Israel, the spectrum is virtually “held hostage” by the operators, and if a public interest exists in the deployment and availability of new technologies, it is not served by this “laissez faire” hands-off regulatory approach. The

Table 2
Comparison of three tender requirements

	1993 Tender (Digital)	1997 Tender (GSM)	2001 Tender (3G)
Spectrum	800 MHz range	900 MHz range	1800/2100 MHz
Compatibility with existing operator	Requirement	Not Applicable	Only with GSM
Technology	At discretion of bidder	A proven technology	At discretion of bidder
Deployment rate	A competitive offer	A minimum dictated by tender	At discretion of winner
Grade of service	A competitive offer	A minimum dictated by tender	A minimum dictated by tender
Dominant deciding factor	Price to consumer	One time payment to state	One time payment to the state
Type of tender	“Beauty contest”	Sealed bid auction	Ascending multiple round auction

Table 3
Operators and HHI in countries with similar GDP/PPP

Country	No. of Operators	HHI score
Israel	4	3158
Korea	3	3946
New Zealand	2	5050
Portugal	3	3633
Singapore	3	3426
Spain	3	3758

decision to leave the fate of deployment in the hands of the operators is further proof of the transition the policy and its underlying conception of the public interest have undergone (Table 3).

The introduction of the non-standard TETRA system could not have boosted the confidence of the market in the regulators, just as the “expedited” process of awarding additional spectrum to Cellcom did not. These events serve as further proof that the government has put its own interests, and perhaps even the interests of the operators, ahead of the public’s interest.

7. Concluding remarks

If the licensing scheme were not proof enough of the shift in policy considerations demonstrated in this study, the “hands-off” approach adopted by the government since the 2001 auctions provides further evidence. While more competition often requires more regulation (Levi Faur, 1999), key issues that might boost competition in the industry, and help minimize the damages caused by the oligopolistic control of the existing operators, such as high prices, have been disregarded. Mobile number portability, for example, a major policy used in promoting competition (Grzybowski, 2005; Buehler & Haucap, 2004) is still a distant plan. Although the need for call termination rates regulation is not uniform (Crocioni, 2001), it may lower prices in “calling party pays” markets (Crandall & Sidak, 2004) and regulating them could reduce prices (Grzybowski, 2005). In Israel, however, these rates remain high because of pressure exerted on the regulatory bodies by the operators. The regulatory bodies themselves remain weak, as the government has refused to surrender power and follow the international trend of establishing an independent regulatory body. These abovementioned policy initiatives are required since, as the data demonstrates, increasing the number of operators in Israel to enhance competition is not a realistic option at this point as the comparison with other countries with similar characteristics demonstrates.

The transition in Israel’s economic ideology that started in 1977 and culminated in the 1990s with the establishment of a bureaucracy-run neo-liberal model characterized by improvisation and lack of transparency, has caused the government to turn its back on the public interest and concentrate on maintaining its own power. Indeed, policies that proved successful in promoting access in other markets, such as “calling party pays,” cost of service (Banerjee & Ros, 2004) and early adoption of mobile technology (Gruber & Verboven, 2001), have promoted the public interest in Israel as well, but they are all now remnants of a previous public interest regime. Even the absence of those sort of policies, which have elsewhere proven beneficial to market development, such as the adoption of uniform technological standards (Banerjee & Ros, 2004), did not impede its growth. In summary, the public policy regime that has emerged in Israel seems to be distancing itself from serving the public interest and concentrating instead on serving the government’s interest of maintaining power and the operators’ interest. There are indeed further policy initiatives that can be deemed “new” to the Israeli market and can potentially make it more consumer-friendly.

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