The Telecom Experience: The Infocomm Development Authority of Singapore and Economic Regulation

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Introduction

In 1992, Singapore had one telephone service provider. Mobile phones were rare. Broadband services were not offered. Now there about 500[1] telecom service providers. About 99.1% of the population have mobile phones and 52.7% of households have broadband access. International call prices have fallen by up to 80% since April 2000. This is a snapshot of the benefits that telecom liberalisation has brought to Singapore.

Competition Philosophy

According to economic theory, competition stimulates innovation, encourages efficiency and reduces prices. In a competitive market, consumers have greater product selections at lower prices as compared to a monopoly. But natural monopolies exist where economies of scale are so great that a single operator can provide services more efficiently than two or more competing operators.

The decision to introduce competition in the telecom sector was influenced by two main factors. Firstly, rapid technological advancement reduced infrastructural costs. The natural monopoly argument thus no longer held true. Secondly, a monopoly provider would not have the right incentives to satisfy the increasingly diverse and sophisticated demand for telecom services to support Singapore's development as a global business hub.

Telecom liberalisation, to enable competition, was thus aimed at increasing consumer choice and stimulating greater market efficiencies. Facilitating competition is a key component of the Infocomm Development Authority of Singapore's (IDA) broader policy objectives of facilitating growth and competitiveness of the infocomm industry, and enhancing Singapore's economic competitiveness through the exploitation of infocomm technologies.

Competition Management Framework

When Singapore began introducing competition to the telecom sector in 1989, and liberalised it fully in 2000, it was following in the footsteps of countries like the US and UK. However, because of Singapore's unique circumstances, it had to be original in formulating a competition management framework, while adapting international best practices.

Unlike most benchmark jurisdictions which had separate sectoral regulators and competition authorities, Singapore did not have a general competition law or history of competition policy that could be applied in the telecom sector. As the telecom sector was the first monopolistic sector to liberalise in Singapore, there were no local templates for competition management that could be adopted. Plans for full liberalisation had also been accelerated so IDA had less than a year to act. It urgently needed to put rules in place to encourage new players to enter the sector after liberalisation.

To satisfy Singapore's particular domestic needs, IDA introduced the Telecom Competition Code (Code) to govern competition in the telecom sector. Among the first of its kind internationally, the Code incorporated both sector-specific *ex ante* regulatory requirements designed to facilitate market entry and protect consumers, and sector-specific *ex post* competition law prohibitions to police any anti-competitive behaviour by telecom licensees. It thus formed a comprehensive basis by which the provision of telecom services would be regulated to encourage competition.

The Code also sets precedence in Singapore as a robust regulatory instrument with clearly

1 Including resellers of Public Switched Telephone Services (PSTS), there are more than 800 licensed operators

articulated regulatory thinking, principles and processes further explained below.

Regulatory Principles

To the extent that markets are effectively competitive, primary reliance is placed on market forces to promote consumer welfare. When a market is not yet competitive, regulation is needed. However this should be no broader than is necessary to achieve the stated policy objectives. Such an approach minimises the market distortions caused by regulation.

The former telecom monopoly possessed enormous market power with its control of the historical nationwide network and legacy customer base. As the sector transited from a traditionally monopolistic market structure to a more competitive one, regulation served several roles. It was used to: remove artificial barriers to entry and curtail potential misuse of market power; act as a proxy for competition where markets were not yet effectively competitive; deter anti-competitive behaviour by industry participants; and safeguard public interests.

The regulatory framework put in place is thus asymmetric, with greater regulation of incumbent dominant operators. Prices and terms of access to historical bottleneck facilities and interconnection with the dominant operators are regulated. Because of their ability to charge monopoly rent for services in markets without effective competition, price control is imposed on dominant operators to act as a proxy for competition.

To ensure sustained competition, fair competition rules are also imposed to prohibit anti-competitive behaviour. Interconnection duties and consumer protection rules are prescribed for the interests of end users.

Regulatory Processes

Complementing the regulatory framework is a series of robust processes. This is especially important for the telecom sector as increasingly belligerent competition results in more regulatory determinations and dispute resolutions. The entry of multiple foreign players seasoned in advocacy also puts pressure on IDA to comply with international best practices.

In response, processes were put in place to ensure transparent and reasoned decision-making. IDA issues guidelines on the standards that the competition prohibitions will be assessed against. It conducts public consultations before taking major regulatory decisions, and posts comments publicly unless they are commercially sensitive. It makes decisions which are non-discriminatory and generally does so within self-imposed timeframes. Regulations are regularly reviewed, either through self-initiated processes or via petitions by licensees. Parties aggrieved by regulatory decisions also have avenues of recourse through the channel of appeal.

Regulation in Practice

The theoretical framework is moot without the prescription and enforcement of accurate regulatory remedies, tailored to the dynamics of specific domestic markets. While every decision or direction incorporates the balance and detail that are critical for regulation in practice, the two short examples on page 8 illustrate the intricacies of telecom regulation.

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Local Leased Circuits

Local leased circuits (LLCs) are dedicated and transparent connections, important for business communications and for providing other telecom services. After several years of full liberalisation, SingTel was still dominant in the LLC markets. Competing operators relied on SingTel's wholesale products to compete in the retail market. There were complaints that SingTel's wholesale LLC prices were too high and so close to their retail LLC prices that competitors were unable to compete effectively in the retail market.

To decide on the regulatory remedy, some of the considerations were:

a. *Build versus Buy.* While the remedy might reduce prices in the short run, it should not distort the economic incentive for operators to invest in and deploy networks to the end user.
b. *Multiple stakeholders.* The competing interests of the incumbent and insurgent operators had to be considered, also taking into account the national objective of ensuring that telecom services are affordable and do not inflate business costs.
c. *Speediness versus accuracy.* Various measures can be used to mandate pricing, some more elegant than others. Those that most accurately reflect cost are more time-consuming to implement since thorough cost audits have to be conducted. There is also a trade-off with the timeliness of the decision.

One remedy that IDA could have adopted was to set a cost-based wholesale price, or a cap on the price of wholesale leased lines until the market became effectively competitive, like in the UK. However, taking into account the need for a quick remedy in the short term, while ensuring sustainable competition in the long term, IDA formulated a series of regulatory interventions which, taken together, would serve to achieve our policy objectives. A short-term remedy would lower wholesale prices immediately, estimating meaningful discounts of between 30% and 50% off SingTel's retail prices. These discounts would allow competing operators to offer competitive services in the short term. However, to provide the incentive for continued facilities build: (a) the mandated pricing terms would expire after the interim period; (b) co-location at SingTel's exchanges would be mandated; (b) SingTel would be required to offer tail LLC (the last bit of the LLC from the exchange to the end users) at cost after the interim period.

SingTel's Reference Interconnection Offer

Interconnection is necessary to allow any telecom network to be connected to any other network (any-to-any connectivity). To facilitate the entry of competing operators, interconnection with the incumbent's network has to be regulated, since it has no commercial incentive to do this itself. The incumbent is thus required to make a Reference Interconnection Offer ("RIO") to be approved by the regulator. The following extract of the RIO describes the excruciating detail required in prescribing remedies.

"SingTel will only use Jumper Wires conforming to <u>CW6000 series</u> with a nominal gauge of <u>0.5mm</u> and use the proper tools for installing Jumper Wires at the Requesting Licensee's Termination Block. The Jumper Wires shall be installed <u>horizontally</u> from either left or right out from its starting Termination Block and then across the jumper field and <u>vertically</u> up or down to the destination Termination Block. Jumper Wires shall not be installed with any <u>slack</u> nor will they be <u>left dangling</u> to cause obstruction to the jumper field."

In addition to designing sound regulations, IDA also has to facilitate commercial negotiations and provide clear dispute resolution processes if negotiations fail. To complete the package, IDA needs to take prompt and firm enforcement action against every breach of regulatory directions.

Conclusion

Economic regulation is an intricate process of ensuring that frameworks are economically sound and operationalised effectively to achieve policy objectives. Regulators need to review regulatory frameworks constantly to keep up with changes in market structures and to ensure that regulation is targeted and complements market forces. ■