Annex –"A"

Recommendations of the TRAI on Intra Circle Mergers & Acquisition Guidelines

1.0 Background

1.1 The Authority has provided its Unified Licensing Regime recommendations to the Government on 27th October 2003, which were accepted by Government of India.

In its recommendations, the TRAI mentioned that

"7.3.2 ...... *a sustainable market structure should be allowed to consolidate so as to achieve higher growth through efficient utilization of resources. Hence intra-circle Merger and Acquisition should be permitted subject to guidelines on Merger & Acquisitions. Other aspects of dominance will also be tested at the time of merger. Guidelines for Merger and Acquisitions shall be recommended to the Government separately.*

7.33 Under intra-circle M&A case, the allocated spectrum to merging operators would also get merged subject to specified principles to be evolved."

1.2 The Authority had gone through the prevalent international practices on the subject and has held detailed discussions with consultants and experts on the subject before finalizing its mergers and acquisitions recommendations. These recommendations focus on intra-circle mergers in the Industry.

2.0 Methodology

2.1 A study was carried out by the Authority to analyse the effect of prospective mergers and acquisitions[1] on the level of competition in the telecom market. The Authority deliberated upon the prevalent international practices and the relevant economic principles before arriving at its recommendations. The key issues involved are

a) Defining the market

b) Determining the criteria for Market Power, and

c) Addressing Substantial Lessening of Competition, both in terms of present and potential market competition.

2.2 The Authority has noted that internationally, strict quantitative criteria for approving or disapproving Merger & Acquisition cases have not been laid down and Merger & Acquisition cases are examined on case-to-case basis. Internationally, the important issue for consideration at the time of approving M&A is not the dominance of merged entity in the market but the likely abuse of its market power. To evolve an empirical formulae or a quantitative criterion of likely abuse of market power by the merged entity prior to the merger is difficult. Accordingly, the TRAI after taking into account the rationale for not specifying strict quantitative criteria for approval of M&A, hereby provides its recommendations on the broad guidelines to examine the M&A cases in the Indian telecom sector by the Competent Authority.

[1] Hereinafter, the term “merger” will also ‘include acquisition, wherever applicable’

2.1 Defining the Market

2.1.1 The issue of competition being reduced due to mergers and acquisitions acquires major significance in the case of access services because these services provide the basis for control over the end user, and for possible abuse of dominance in a service segment that is fundamental to growth and affordability of telecom services. While defining the markets, the Authority considered and deliberated upon the various options for classifying the Access segment. These included classifying the

a) Entire access segment as one single market;
b) Access segment as comprising of two different markets viz., fixed and mobile.

In case, the markets are defined as “Access” markets by aggregating the fixed and mobile markets, owing to large market share of the incumbent operator, i.e. BSNL/MTNL (which varies from 60% to 75% of both fixed & mobile subscribers in most of the circles), the merger regulations would lose their relevance as all the circles would then be construed to be dominated, by one large operator, and if there is a merger even amongst all the operators, the market share of the merged entity would never exceed 40%. Thus, if we take the whole access market as our reference point, mergers amongst operators other than the incumbent would not lead to dominant entities and hence would bypass the entire test of dominance, which would render the guidelines irrelevant. Further, the mobile segment of the market is the one contributing to the ‘immense growth and greater affordability of access services’. An operator dominant in the mobile market, but not dominant in the overall access market, would be in a position to adversely affect competition in the mobile market. The mobile

and fixed markets are not perfect demand substitutes of each other, as the usage profile and requirements of the two sets of consumers/users are not the same. It is, therefore, advisable that the intra circle access market be classified as 'Fixed' and 'Mobile', wherein Mobile includes mobility of any sort including WLL (M).

2.2 Basis for computing the market share

2.2.1 While computing the market shares of various operators, one can use subscribers, revenues or capacity as indicators of the market share. The international practice is normally to use number of subscribers as indicator for computing the market share. In our opinion also, for the purposes of Mergers & Acquisitions, subscriber numbers should be the preferred criterion to compute the market shares. If market share is defined on the basis of revenues then despite having lower subscribers, an operator may have higher market share on account of higher ARPU. In general, the focus of sustained anti-competitive activity is to wean away subscribes through unfair competition. Higher share in revenues compared to that for subscriber base would imply higher ARPUs, which are normally difficult to sustain over time if the other operators aggressively seek additional market share and high revenue subscribers. We, therefore feel that subscriber base would be an adequate criteria for our purpose.

2.3 Determining the criteria for Market Power

2.3.1 Internationally, Market power is often defined as (Price – Marginal Cost)/Price, which is a function of not only concentration but also of demand elasticity, supply elasticity of rival firm, market share of competitive firms and their reactions and differences in cost and risk. There is substantial evidence towards using a measure of

concentration to determine market power. Therefore, most regulators/authorities use concentration measures as indicators of market power. The two indicators most commonly used are Hirschmann-Herfindahl Index (HHI) / Incremental HHI and Concentration Ratio. However, these indices are generic in nature and not specific to the telecom sector.

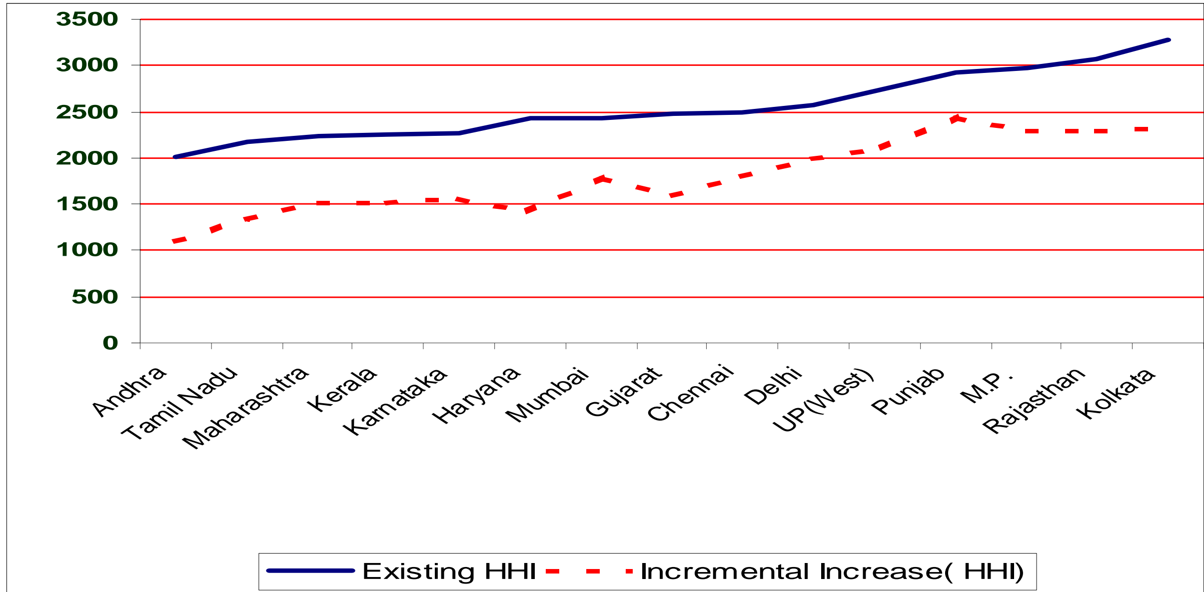
1. HHI (Hirschman Herfindahl Index) is the sum of squares of market shares (%) of all firms in the identified market while Incremental HHI is the difference between the post merger and pre merger HHI.
2. Concentration ratio (CR): Sum of shares of largest n firms (CRn; where n represents the number of top 2,3 or 4 firms)

2.3.2 The International benchmarks of HHI and CR for all industries are tabulated below:

Country	HHI / Increase in HHI	Concentration ratio & share of merged firm	Remarks
United States	1800/100	No reference	"Considered presumptively anti-competitive'
United Kingdom	2000/150	No reference	"Raise serious doubts"
European Commission	2000/150	No reference	"Raise serious doubts"
Australia	No reference	CR4>=75% and merged firm >15%	"More likely to investigate"
Brazil	No reference	CR4>=65% and merged firm >10%	"Likely to raise concern"
Canada	No reference	CR4>65% and merged firm>10%	"Investigate further"
Singapore	No reference	CR4> =75%; and merged firm>=15% or merged firm>=40%	"Investigate further"

2.3.3 The details of HHI Indices for Mobile Market in each circle in India are given in Annexure I. The figure below shows the concentration measure in terms of HHI and for incremental HHI for the mobile market. The incremental HHI has been calculated in case two top firms merged in each circle in India.

Figure 1: HHI and Incremental HHI for "Mobile" markets



Note: Chart is for only those circles which have more than 3 operators.

It would be apparent from above that HHI in the Indian Telecom Sector is far in excess of the benchmarks applied to industries under competition guidelines in other countries. Also, in case of Mergers the incremental HHI follows a similar pattern. To analyse this issue further, the TRAI has also examined the applicability of HHI index in the mobile markets of other countries.

The details are given in the table below

Name of countries	Number of GSM operators	Minimum HHI, i.e., assuming equal market share
China	2	5000
Belgium, Czech Republic, Estonia, France, Greece, Hungary, Ireland, Lithuania, Malaysia, Poland, Portugal, Romania, Spain, Sweden, Switzerland	3	3000
Austria, Denmark, Germany, Italy, UK	4	2500
Netherlands	5	2000

It would be seen from the above table that in countries with 2-3-4-5 mobile operators, the HHI index would be in the range of 2000 to 5000. This shows that general HHI index may not be generally applicable to mobile telecom networks. The reasons are not far to seek. Efficient utilisation of spectrum is an important consideration for design of mobile networks. Spectrum is best utilised without being subdivided. While countries have been forced to subdivide spectrum to enforce competition among operators, the efficiency aspect has also meant that the number of operators are relatively few. Moreover, the mobile market has been opened up only in phases and the initial operators have a relatively large market share, leading to a relatively high HHI. Therefore, the generally used HHI benchmarks are not useful for assessing mergers and acquisitions in the mobile telecom market.

2.3.4 Further, for the mobile market, we need to balance between the efficient utilisation of spectrum on the one hand and ensuring adequate competition on the other. It can be seen from the above Table that, with the increase in the number of operators the level of competition increases and the HHI reduces. However, the increase in number of operators has an adverse impact on efficient utilisation of spectrum, spectrum being a limited and scarce resource affecting both competition and provision of services in the mobile markets. Accordingly, in the mobile market, it is not advisable to use the HHI criteria to examine the M&A cases.

The basic objective of maintaining competition in the market remains relevant and certain other, more useful criteria could be considered for this purpose. For instance, some criteria taking account of the scarce resource, spectrum, may be relied upon. Also, a minimum number of operators are a good means of creating conditions for present and potential competition. We are of the opinion that M&A should not be allowed if it leads to less than three operators in the market.

2.3.5 In addition, the TRAI examined some other indicators of market power,

1) Absolute Market share of merging entities

2) Concentration Ratio of top two firms in mobile market, where merger is taking place.

2.3.6 ***Absolute market share of merging entities:*** Internationally, countries have used market share in terms of subscriber base as one of the criteria to classify any operator as dominant. The general benchmark for market share to define dominance varies between more than 30% to 50%. We have seen very intense competition in India even from operators with relatively small market share, which effectively meant

that larger operators were not in a position to unfairly exploit their dominance. The competitive stimulus in India is likely to be strong even if the non-merged operators account for about 50% of the market,. At the same time, we feel that ruling out anti-competitive behaviours of the merged entity does not necessarily require that its market share be limited towards the lower end of the range of 30% to 50%. For examination of M&A cases in India, therefore, the Authority recommends that a market share greater than 50% of the merged entity should be used as one of the criteria for further examination of the merger.

The above criteria alone is not sufficient to obtain an adequate perspective on the possibility of market dominance and its abuse by the merged entity. We need to supplement this with another criteria, which will indicate a possibility of certain operators to be able to effectively compete in the market even if a certain number of operators collude. This is the criteria of concentration ratio which is discussed in the subsequent paragraphs in view of inter alia the case of possible collusion for such firms and over above mentioned limit of at least three firms to be in the market.

2.3.7 ***Concentration Ratio of top two firms in mobile market, where merger is taking place:*** Internationally, countries such as Australia, Brazil, Canada use Concentration Ratios to evaluate cut off levels. Generally, Concentration of top 2 or 3 firms is taken for evaluating cut-off levels When considering the concentration ratio, an important point to bear in mind is that if certain operators collude and adversely affect prices, the remaining operator(s) should have a substantially large enough market base to offer an effective and viable competitive alternative. Further, assessment will have to be based on the market situations.

In a circle with four operators when a merger takes place between two operators, the criterion of at least three operators in a post merger scenario is met. The next question comes to decide the cut off level of CR2. If the third operator has at least 25% market share, then as per practice followed in some countries, this operator could be said to have significant market power. This implies that cut off level of CR2 could be specified as 75%. In view of the above, the Authority feels that if CR2>75%, then the desirability of the merger will need to be examined.

2.3.8 Internationally, if a merger shows that relevant bench marks (such as market share, etc.) are exceeded, the Competition Authorities examine the Merger for possible substantial lessening of competition. The Authority has taken note of the international practices in this regard and the guiding principles for substantial lessening of competition are provided in Annexure II.

3 Treatment of spectrum as a result of Intra Circle merger

3.1 In para 7.33 of TRAI's recommendations on Unified Licensing, it was mentioned that under intra-circle M&A the allocated spectrum to merging operators would also get merged subject to specified principles to be evolved. The Authority recognises that when there are Mergers between two Cellular Mobile Service Providers, it is the value of spectrum that triggers such mergers. Accordingly, while formulating its recommendations, the following issues were carefully considered.

3.1 Current level of allocated spectrum

3.1.1 In India, the Cellular Operators operating on GSM have been allocated spectrum ranging from 4.4 Mhz to 10 Mhz based on certain specified criteria including subscriber base. For CDMA based operators, 2.5 Mhz

(subject to a maximum of 5 Mhz) has been allocated. In comparison we may consider the EU countries, where average spectrum in the range of 10 Mhz to 27 Mhz has been allocated to various cellular operators. A Table illustrating the level of spectrum allocations in India and other countries are provided at Annexures III & IV (i) and (ii) respectively.

3.2 Current subscriber base and rate of growth

3.2.1 The cellular industry today is experiencing tremendous growth with about 2 Million customers being added every month. The number of cellular subscribers has increased from 10.6 Million in December 2002 to 29 Million in December 2003. With aggressive competition, largely manifesting in tariff decline, the rate of growth would increase further. Also, the onset of a free incoming call regime has substantially increased the traffic resulting in an increased load on spectrum. These aspects of spectrum utilization are presently under study by the TRAI.

3.3 International practices on Merger of spectrum under M&A cases

3.3.1 A study of merger regulations across various countries revealed that spectrum of the acquired entity is retained with the merged firm irrespective of whether spectrum was auctioned or granted with the licence.

3.4 Efficient Utilization of spectrum and preventing spectrum hoarding

3.4.1 The TRAI is presently working on guidelines of efficient utilisation of Spectrum, allocation and pricing, which shall form part of a comprehensive spectrum management policy (for which, the Government of India has sought TRAI's recommendations separately).

Prior to the more detailed spectrum guidelines, we need to provide an indication of the policy towards merged mobile service operators. This policy has to take account of the fact that merger of spectrum is one of the important factor for triggering the M&A. At the same time, the Authority would like to prevent hoarding of spectrum. Keeping all these factors in mind, the Authority has decided that the maximum spectrum that could be held by a Merged entity should be capped at 15 Mhz per operator per service area for Metros & Category 'A' Circles and 12.4 Mhz per operator per service area in Category 'B' and Category 'C' Circles. The merged spectrum subject to these limits would remain with the merged entity even after issue of detailed spectrum guidelines. The guidelines on Spectrum would entail details of efficient utilization and for this purpose the total amount of spectrum emerging after Merger would be treated as the starting point for further allocation. The further allocation of spectrum to the merged entity will be as per the criterion laid down in detailed spectrum guidelines which will be issued separately.

4. License conditions and equity holdings

As per license conditions, no single company/legal person, either directly or through its associates, shall have substantial equity holding in more than one Licensee Company in the same service area for the same Service. 'Substantial equity' wherein means 'an equity of 10% or more'. A promoter company is not permitted to have stakes in more than one licensee company for the same service area. While examining M&A cases, this aspect needs to be kept in mind in cases where there are two such companies operating in the same market even under different licenses.

5. Recommendations

5.1 While Mergers to encourage efficiencies of scope and scale are desirable, care has to be taken that monopolies do not emerge as a consequence. Based on the above discussion, the Authority recommends the following broad guidelines to examine the intra circle Mergers & Acquisition cases.

i. If consequent to the merger under consideration, the number of operators in any circle/served market reduces below three (3), the merger will not be allowed by the competent authority.

ii. Detailed examination of the impact of merger would be conducted by the Competent Authority in the following cases:

- Market share of merged entity is greater than 50%; and
- Concentration ratio of top 2 firms (CR2) in a post-merged scenario is greater than or equal to 75%.

The guiding principles to examine such M&A cases are provided in Annexure II.

iii. The competent Authority would also consider allowing mergers in cases where one of the merging parties is a failing firm and in case:

- The firm and its assets would have to exit the market in the near future irrespective of the merger; and
- There should be no serious prospect of restructuring the business without the merger
- However, in any such case, the onus to prove that the merger would substantially improve the prospects of the firm warding off failure would rest on the merging parties.

iv. The spectrum of the merging entities should be merged subject to the limits prescribed in para 3.4.1 above. Any further allocation should be as per the spectrum guidelines to be issued separately. For the purpose of future allocation, the total spectrum of the merged entity should be taken as the starting point.

v. For the purpose of the conditions (i) to (iv) above, the impact of equity share holding by the same business group / promoter in more than one company in the same license area as described in Para 4 above needs to be kept in mind.

5. Other related issues

All telecom mergers are to be notified to TRAI. The merged entity should obtain the approval of the licensor, i.e. Department of Telecommunications (DoT) for the proposed merger.

- TRAI reserves the right to intervene and or inquire into expected or completed mergers.
- The operators may note that TRAI has already classified an operator having market share greater or equal to 30% of the relevant market as one having “Significant Market Power” in its Reference Interconnect Order (RIO). In case the merged entity becomes an SMP post merger then the extant rules & regulations applicable to SMPs would also apply to the merged entity.

6. Review of recommendations

As the present industry is in a stage of flux and would need some time before the market stabilizes, the TRAI is of the opinion that the Merger Guidelines may be reviewed after one year.

Annex – I (HHI Index for the Mobile Market – as on September 30, 2003)

Name of the Circle	No. of Players	Market Share (%)	HHI Index
Maharashtra	6		
- Bharti		9%	
- BPL		11%	
- Idea		33%	
- BSNL (M)		23%	
- Reliance		20%	
- Tata Teleservices		4%	
Total		**100%**	**2,236**
Gujarat	6		
- Fascel		38%	
- Idea		16%	
- Bharti		6%	
- BSNL (M)		21%	
- Reliance		18%	
- Tata Teleservices		2%	
Total		**100%**	**2,471**
Andhra Pradesh	6		
- Idea		18%	
- Bharti		24%	
- Hutch		5%	
- BSNL (M)		22%	
- Reliance		23%	
- Tata Teleservices		7%	
Total		**100%**	**2,007**
Karnataka	6		
- Bharti		34%	
- Spice		13%	
- Hutch		9%	
- BSNL (M)		18%	
- Reliance		23%	
- Tata Teleservices		3%	
Total		**100%**	**2,268**
Tamil Nadu	6		
- BPL		13%	
- Aircel		23%	
- Bharti		8%	
- BSNL (M)		25%	
- Reliance		27%	
- Tata Teleservices		3%	
Total		**100%**	**2,180**
Kerala	5		
- Escotel		27%	
- BPL		15%	
- Bharti		9%	
- BSNL (M)		28%	
- Reliance		22%	
Total		**100%**	**2,252**
Punjab	4		
- Spice		33%	
- Bharti		37%	
- BSNL (M)		15%	
- Reliance		15%	
Total		**100%**	**2,919**
Haryana	5		
- Escotel		23%	
- Aircel Digilink		3%	
- Bharti		22%	
- BSNL (M)		31%	
- Reliance		21%	
Total		**100%**	**2,422**

Annexe – 1 (HHI Index for the Mobile Market – as on September 30, 2003)

Name of the Circle	No. of Players	Market Share (%)	HHI Index
Uttar Pradesh (W)	4		
- Escotel		34%	
- Bharti		17%	
- BSNL (M)		31%	
- Reliance		17%	
Total		**100%**	**2,742**
Uttar Pradesh (E)	3		
- Aircel Digilink		25%	
- BSNL (M)		42%	
- Reliance		33%	
Total		**100%**	**3,471**
Rajasthan	4		
- Aircel Digilink		5%	
- Hexacom		36%	
- BSNL (M)		32%	
- Reliance		27%	
Total		**100%**	**3,075**
Delhi	6		
- Bharti		37%	
- Hutchison		27%	
- MTNL		4%	
- Idea Cellular		10%	
- Tata Teleservices		3%	
- Reliance		18%	
Total		**100%**	**2,573**
Mumbai	5		
- BPL		28%	
- Hutchison		32%	
- Reliance		20%	
- MTNL		6%	
- Bharti Cellular		14%	
Total		**100%**	**2,433**
Chennai	5		
- RPG Cellular		19%	
- Bharti Mobinet		25%	
- Reliance		36%	
- Hutchison		9%	
- BSNL (M)		11%	
Total		**100%**	**2,491**
Kolkata	4		
- Bharti Mobitel		29%	
- Hutchison		40%	
- Reliance		29%	
- BSNL (M)		2%	
Total		**100%**	**3,269**
West Bengal	2		
- Reliance		18%	
- BSNL (M)		82%	
Total		**100%**	**7,081**
Madhya Pradesh	4		
- Idea		28%	
- Bharti		12%	
- BSNL (M)		19%	
- Reliance		41%	
Total		**100%**	**2,976**
Himachal Pradesh	3		
- Bharti		46%	
- Reliance		11%	
- BSNL (M)		42%	
Total		**100%**	**4,070**
Bihar	2		
- Reliance		61%	
- BSNL (M)		39%	
Total		**100%**	**5,260**
Orissa	2		
- Reliance		50%	
- BSNL (M)		50%	
Total		**100%**	**5,000**
Assam	1		
- Reliance		100%	
Total		**100%**	**10,000**

Source: TRAI, COAI, ABTO, ICRA Analysis

Annex II: Guiding principles for examining substantial lessening of competition

(A) Market Power, Dominance and Concentration

All competition commissions and anti-trust authorities focus on the issues of market power and the consequent ability of dominant firms in the market to abuse market power to lessen the competition/rivalry between firms in the market. ‘Market power’ is an economic concept, which is often given a distinct legal status as a ‘dominant firm’. Market power is construed as the ability of firms to independently raise prices above the prevailing market prices, irrespective of actions of other firms. It is important to differentiate between market power or dominance and the abuse of market power or anti-competitive behaviour. Market power is not necessarily construed as anti-competitive unless it is accompanied by or leads to its abuse as in anti-competitive behaviour. Effective competition can therefore be understood as the absence of abuse of market power.

Market power can be derived from various structural sources such as high sunk costs, regulatory barriers, economies of scale, product/service differentiation and the chances of abuse get amplified with increasing concentration and are mitigated by the presence of good supply and demand substitutes, excess capacity of competing firms, strong buyer power and likelihood of new entries.

The following excerpts from the European Commission’s competition department illustrate these issues

1. “Firms turn into a dominant position when they have the power to behave independently without taking into account, to any substantial extent, their competition and ultimately their consumers” - European Commission.

2. The role of competition authority is therefore, defined as, "restricting serious and permanent market power without adversely affecting incentives for innovation and efficiency" .

The usual approach to measure market power is through measuring market concentration (determined by indices based on size and share of firms), that is used as a proxy for market power. All guidelines reviewed use either Concentration ratio or Hirschmann-Herfindahl Index (HHI) as a measure of concentration and then the guidelines concentrate on evaluating "substantial lessening of competition". The determination of market power - dominant operator or concentration - is the starting point, the existence of which necessitates evaluating its impact on the level of competition by the competition authorities.

The Process of Regulating Mergers

The process of review of mergers varies across countries. Some countries such as Canada and Brazil require prior approval of the concerned competent authority for mergers to proceed. In the United Kingdom, the Office of Fair-Trading (OFT) and Competition Commission (CC) are required to enquire into mergers, which satisfy the substantive test for the merged or merging firms

a) one -fourth share of supply
b) Turnover greater then 70 million pounds

The EC is responsible for reviewing mergers that meets the following criteria

1) Worldwide turnover greater than Euro 2.5 billion
2) Turnover greater than Euro100 million in each of at least three member states
3) Each of the two companies must have community turnover greater than Euro 100 million

The members of the European Commission are required to refer mergers with ‘community effect’ to the Commission. The Department of Justice (DOJ) and Fair Trading Corporation (FTC) review cases of anti-trust violation in the United States usually in response to lawsuits. In Malaysia and Singapore there are specific guidelines for the telecom sector and they designate operators with significant market power (SMP) as dominant. In all cases, the competent authority has *suo-moto* powers to review the completed or prospective mergers. As is the convention in most countries, the merging parties usually get their merger proposals reviewed by the concerned authority.

The guidelines pertaining to merger regulations are issued by the competition authorities except for Malaysia and Singapore where the sector regulator has issued specific guidelines for telecom mergers and their implications on the level of competition. In any case, the starting point for review of mergers or its implications on the level of competition in the sector starts with defining ‘relevant markets’.

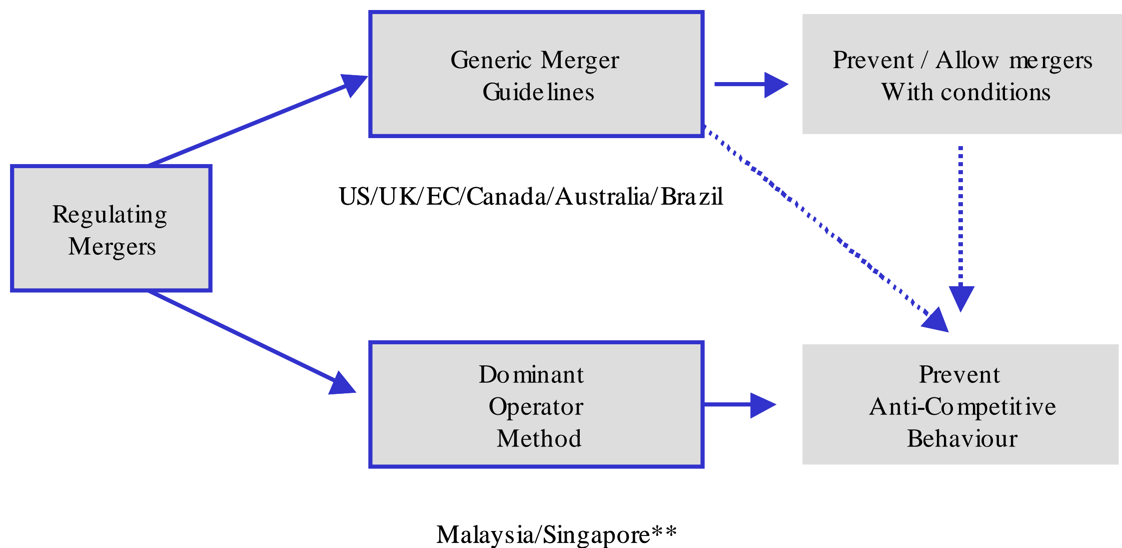
Our study of the processes followed in the various countries leads us to broadly delineate two routes to sustain free and fair competition in the telecom sector.

1) Adapt the economic principles of measuring “market power” and evaluating substantial “lessening of competition” as defined and used by the competition authorities elsewhere.
2) Designate operators with significant market power as “dominant” and then focus on abuse of market power /anti-competitive conduct by such dominant operators, in the post-merger situation.

It needs to be understood that in the second case there are no specific merger related guidelines, which apply on merging firms as regards to market power.

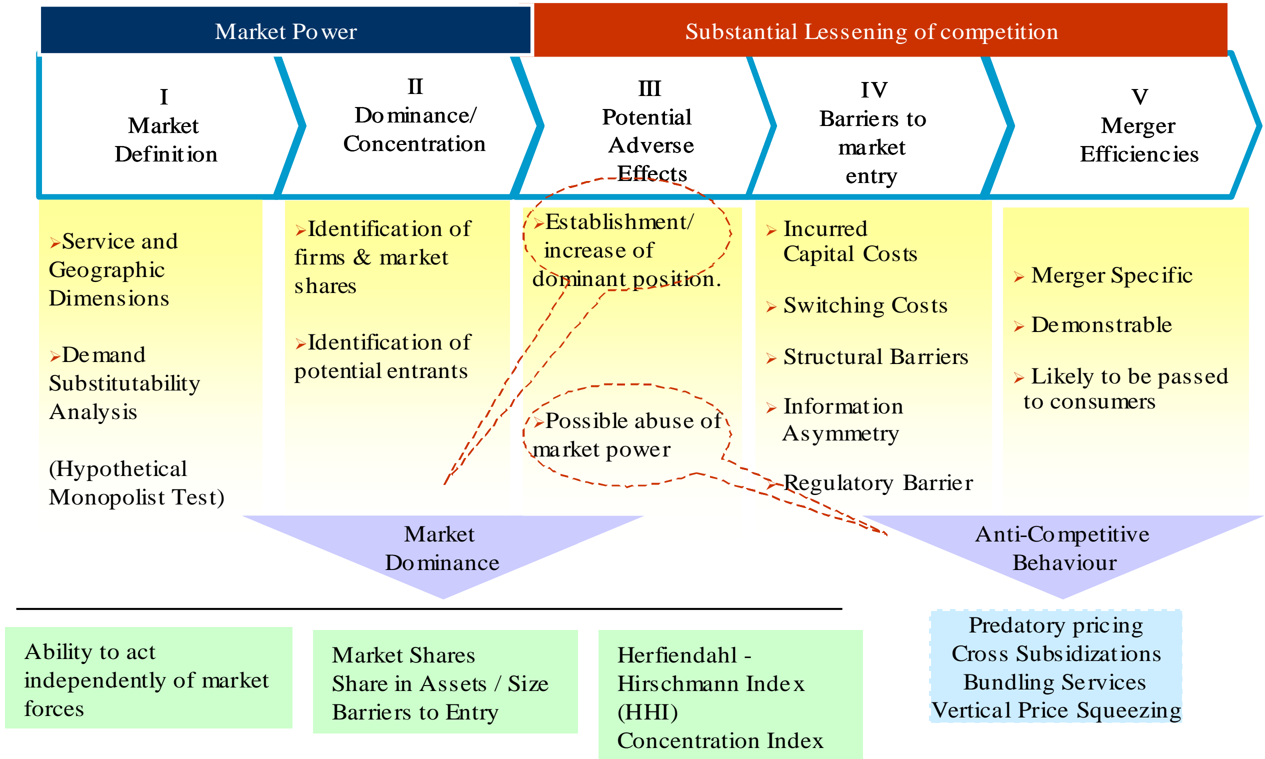
It is incumbent on the firms to evaluate the rules of conduct in a post merger situation and follow them. Ex-Ante regulation of mergers is however, recommended by ITU in competition policy guidelines.

The alternative routes to regulating mergers can be graphically depicted in the following figure



The key to start the process of evaluating or initiating enquiry into whether or not a completed merger or prospective merger can have anti-competitive effects is to consistently define 'relevant markets'. The five-stage evaluation process is represented graphically in the following figure, which is the core of any competition guideline and same principles are used wherever the dominant operator method is adopted by the competent authorities.

Measuring Market Power and Evaluating Lessening of Competition: The Five – Stage Model



The elements of this model are described in detail in the following sections.

I. Defining Markets

The first step in assessment of any market power and dominance is the credible and an accurate definition of markets. It is only by defining the boundaries of business activity that the competitive constraints acting on any product/service and its provider/supplier can be determined and market power/dominance measured accordingly. Merger and competition guidelines in all countries studied use standard economic method of SSNIP (Small but Significant Non Transitory Increase in Price) to define markets and the dimensions on which the test is applied are

1. ***Product/Service-Markets***
2. ***Geographic/Regional Markets***

Demand and Supply Substitution analysis is used to define market boundaries on these dimensions. In defining markets for telecommunication services supply substitution is not relevant as it is usually not possible for competing firms to switch facilities in the short - run, Demand substitution is to be evaluated by application of the Hypothetical Monopolist Test (SSNIP). In simpler terms "A given product /geographic market area should include all those products which are good substitutes both in the demand and the supply" (ITU). In defining services and geography all guidelines (of the countries researched) refer to the following considerations

Product/Service - Markets: All the products/services, which are regarded as interchangeable by consumer by reason of product/service characteristics, their prices and their intended use. Factors to be considered while evaluating substitution include physical characteristics, intended use, prevailing prices and consumer preferences.

Geographic Market: The geographic market must be an area in which the conditions of competition applying to the product concerned are same for all suppliers." Factors to be considered include regional differences, prices, transport costs and consumer preferences.

The SSNIP Test (Small but significant and non-transitory increase in price - usually 5%)

This concept can be clarified by considering the following explanation by the European Commission.

"The question to be answered is whether the parties' customers would **switch** to readily available substitutes or to suppliers located elsewhere in response to a hypothetical **small** (in the range 5% to 10%) but **permanent** relative price

increase in the products and areas being considered. If substitution were enough to make the price increase unprofitable because of the resulting **loss of sales**, additional substitutes and areas are included in the relevant market. This would be done until the set of products and geographical areas is such that small, permanent increases in relative prices would be profitable."

Applying SSNIP and defining markets for telecom services

The application of SSNIP in defining markets makes the use of economic principles in defining markets, which makes the definition, and process of providing boundaries, to markets independent of technical and consumer preference changes so that the test can be applied to all markets under all structural conditions. However, there are practical limitations to the application of SSNIP in terms of past information being available to apply the test and there are issues of relativity of prevailing price levels. It is recognised by competition authorities and regulators that the rigorous application of SSNIP may often lead to very narrowly defined markets and it is therefore recommended that a more pragmatic and easily applicable approach be taken towards broader market definitions. It is also advisable that narrower markets be defined only when there is credible information regarding lack of competitive forces with respect to provision of a particular service. In addition there are a number of other issues associated with product demand substitution for telecom services markets such as:

- Bundling of services
- Existence of cluster markets
- Potentially high switching costs
- Existence of retail and wholesale markets
- Differing consumer behaviour in residential and non-residential markets

Defining markets in telecom services can be as follows:-

a) Define relevant markets by service and geography considering produce and demand substitutes for the service and region.
b) The rationale for analyzing whether there would be demand and/or supply substitution will have to be based on progressive application of SSNIP to the extent feasible with the available level of information.

II. Measuring Market Power/Dominance

Market power is often defined as (Price – Marginal Cost)/Price, which is a function of not only concentration but also of demand elasticity, supply elasticity of rival firm, market share of competitive firms and their reactions and differences in cost and risk. There is substantial evidence towards using a measure of concentration to determine market power, therefore most regulators/authorities use concentration measures as indicators of market power .The two indicators most commonly used are **Concentration Ratio** and **Hirschmann -Herfindahl Index**

3) Concentration ratio (CRn): Sum of shares of largest n (2/3/4/5) firms.
4) HHI (Hirschman Herfindahl Index) is the sum of squares of market shares (%) of all firms in the identified market.

This is used as a starting point by most competition authorities; and it is important to note that evidence of market power cannot be interpreted as evidence of its abuse or it cannot be necessarily concluded that it would lead to substantial lessening of competition.

Merger and competition guidelines of various countries stipulate certain quantitative limits for authorities to get concerned about mergers. The resultant increase in HHI that would be affected by a merger relative to the post-merger level of HHI is considered to be an important indicator of the likely lessening of competition and therefore it requires the authority to investigate the anti-competitive effects of mergers further. Some examples of the use of concentration ratio and HHI are given in table.

Measuring Market Concentration: Using HHI and CR

Country	HHI / Increase in HHI	Concentration ratio & share of merged firm	Remarks
United States	1800/100	No reference	"Considered presumptively anti-competitive'
United Kingdom	2000/150	No reference	"Raise serious doubts"
European Commission	2000/150	No reference	"Raise serious doubts"
Australia	No reference	CR4>=75% and merged firm >15%	"More likely to investigate"
Brazil	No reference	CR4>=65% and merged firm >10%	"Likely to raise concern"
Canada	No reference	CR4>65% and merged firm>10%	"Investigate further"
Singapore	No reference	CR4> =75%; and merged firm>=15% or merged firm>=40%	"Investigate further"

The yardsticks and limits illustrated in the table are derived from generic competition guidelines and would have to be adapted for different products and services based on the structure and maturity of the markets in question. In addition, these limits are only to be used as starting points for investigating further the anti-competitive conduct or substantial lessening of competition.

(B) Substantial Lessening of Competition (SLC)

The definition of substantial lessening of competition is based on two concepts regarding expected conduct of firms in a market with dominant market power of a single or group of firms. These are **unilateral effects** and **coordinated effects.** The evaluation of lessening of competition revolves around evaluation of these two likely effects in conjunction with barriers and chances of new market entry and structural aspects of mergers in case of vertical and other mergers.

***Unilateral Effects*:**

Merger may threaten competition by eliminating the direct competitive constraint between parties. Consequently, the prices charged by the merged entity may increase relative to their pre merger level : “The merged group is able to profitably reduce value for money, choice or innovation through its own acts without the need for cooperative response from competitors” – OFT, UK

Coordinated Effects

Merger may threaten competition if the change in market structure post merger is more conducive to tacit or explicit collusion : “A merger may diminish competition by enabling the firms selling in the relevant market more likely, more successfully, or more completely to engage in coordinated interaction that harms consumers. Coordinated interaction is comprised of actions by a group of firms that are profitable for each of them only as a result of the accommodating reactions of the others. This behaviour includes tacit or express collusion, and may or may not be lawful in and of itself.” – DOJ-FTC

The European Commission warns against mechanical application of these principles and advises for specific application in respective markets. The

guidelines on SLC as drawn from EC, UK and US authorities also provide certain characteristics of markets where SLC is more likely to take effect.

- Highly concentrated market;
- Homogeneity of products/firms;
- Inelastic demand;
- Absence of potential entrants/fringe competitors;
- History of co-ordination between firms;
- Presence of standardised pricing;
- Transparency of prices/ other terms; and
- History of government price controls.

In addition it is necessary to evaluate barriers to market entry and likelihood of new entries and some competition merger guidelines also assesses efficiencies resulting form the merger particularly in terms of utilisation of scarce resources.

III. Adverse Merger Effects

The framework of evaluation of Substantial Lessening of Competition is based on analysis of expected adverse effects of mergers through co-ordinated and unilateral effects /conduct which get manifested as

1. Predatory Pricing

Predatory pricing is the practice of providing services at prices that are low enough to drive competitors out of the market. Essentially considered to be pricing below average variable cost by merged entity resulting in rivals exiting the market.

2. Bundling of services

Bundling is the practice of assembling multiple services together in an integrated offer. This may be an anti-competitive conduct if this is not done for convenience, safety or technical interdependence.

3. Vertical Price Squeezing

Vertical price squeezing can occur when an operator with market power controls certain key inputs for competitors in downstream markets and where the operator or its affiliates use those key inputs to compete in the downstream market.

4. Anti-competitive Cross – Subsidisation

Anti-competitive cross subsidisation is of concern in vertical network markets where a dominant entity in one market may maintain prices higher in a less competitive market and use excess revenues to subsidise prices in more competitive downstream or upstream markets

IV. Evaluating Market Entry

Even if a merger that materially increases market concentration may not be anti-competitive if new firms would enter the market (expand production/service) and thus prevent incumbent/merged firms from exercising market power. Guidelines on evaluating market entry in jurisdictions (UK/EC/US/Malaysia) assess whether new entry would be

- Likely
- Timely
- Sufficient in scale and scope.

Evaluation of new entry possibility is done on a case-by-case basis. Whereas DOJ-FTC in the US uses quantitative dimensions on Minimum Viable Scale (MVS) and others like the OFT-UK and EC qualitatively judge on barriers to entry. MVS is the smallest annual level of sales necessary to cover costs including an appropriate rate of return on capital. Available sales opportunity generally assumed to be about 5% of total market sales. Barriers to entry are features of market that may provide the merged firms with decisive edge over potential competitors. Such features can be legal, technical and strategic. General agreement is that the entry must be sufficient in magnitude and

scope to effectively deter anti-competitive effects, and entry must be likely to occur over a short span of time (within two years) to counter anti - competitive effects.

V. Merger Efficiencies

Merger efficiencies are generally viewed with scepticism and are not considered as a mitigant in case the SLC test fails. Merger guidelines from competition authorities refer to the following issues for evaluating merger efficiencies:

(a) What are the benefits specifically arising from the Merger at hand?

(b) Demonstrability of savings (Fixed cost and long-term savings are not considered; quantifiable productive efficiencies associated with variable costs are usually accepted)

(c) Likelihood of merger benefits to be passed on to the consumers

In this context, it may be mentioned that in all such cases, the onus of proof (that the merger may lead to efficiencies) lies with the merging parties.

ANNEXURE-III
SPECTURM ALLOCATION TO INDIAN OPERATORS

	Circle	Operator	Spectrum Allotted
1	Delhi	Bharti	10 MHz
		Hutch	8 MHz
		MTNL	6.2MHz
		Idea	6.2 MHz
2	Mumbai	BPL	8 MHz
		Hutch	8 MHz
		MTNL	6.2 MHz
		Bharti	6.2 MHz
3	Chennai	RPG	6.2 MHz
		Bharti	6.2 MHz
		BSNL	6.2 MHz
		Hutchison	6.2 Mhz
4	Kolkata	Bharti	6.2 MHz
		Hutchison East	6.2 MHz
		BSNL	6.2 MHz
5	MH	BPL	6.2 MHz
		Idea	6.2 MHz
		BSNL	6.2 MHz
		Bharti	6.2 MHz
6	GUJ	Fascel	8.0 MHz
		Idea	6.2 MHz
		BSNL	6.2 MHz
		Bharti	6.2 MHz
7	AP	Idea	6.2 MHz
		Bharti	6.2 MHz
		BSNL	6.2 MHz
		Hutchison	6.2 Mhz
8	KTK	Bharti	6.2 MHz
		Spice	6.2MHz
		BSNL	6.2 MHz
		Hutch	6.2 Mhz
9	TN	BPL	6.2 MHz
		Aircel	6.2 MHz
		BSNL	6.2 MHz
		Bharti	6.2 MHz
10	Kerala	Escotel	6.2 MHz
		BPL	4.4 MHz
		BSNL	6.2 MHz
		Bharti	6.2 MHz
11	Punjab	Spice	6.2 MHz
		Bharti	6.2 MHz
		BSNL	6.2 MHz
12	Haryana	Escotel	6.2 MHz
		Aircel Diglink	6.2 MHz

		BSNL	6.2 MHz
		Bharti	6.2 MHz
13	UP-W	Escotel	6.2 MHz
		BSNL	6.2 MHz
		Bharti	6.2 MHz
14	UP-E	Aircel Diglink	6.2 MHz
		BSNL	6.2 MHz
15	Rajasthan	Aircel Diglink	6.2 MHz
		Hexacom	6.2 MHz
		BSNL	6.2 MHz
16	MP	Idea	6.2 MHz
		Reliance	6.2 MHz
		BSNL	6.2 MHz
		Bharti	6.2 MHz
17	WB & A&N	Reliance	4.4 MHz
		BSNL	6.2 MHz
18	HP	Bharti	6.2 MHz
		Reliance	4.4 MHz
		BSNL	6.2 MHz
19	Bihar	Reliance	6.2 MHz
		BSNL	6.2 MHz
20	Orissa	Reliance	6.2 MHz
		BSNL	6.2 MHz
21	Assam	Reliance	6.2 MHz
22	NE	Reliance	4.4 MHz
23	J&K	BSNL	6.2 MHz

*cellular operators with CDMA technology have generally been given 2.5 MHz.

SOURCE: WPC

Annexure IV (i)

Allocation of Spectrum in EU Countries

Sl. No.	Name of the Country	No. of GSM Operators	Total Frequency made available for GSM Service**	Average GSM Frequency per Operator	Number of Mobile Subscribers as on 2001 (in thousands)	Subscribers per MHz
1	Austria	4	2x59.6 MHz	2x14.9MHz	6’565.9	109060
2	Belgium	3	2x81.0MHz	2x27.0MHz	7’690.0	93827
3	Czech Republic	3	2x49.8MHz	2x16.6MHz	6’769.0	134538
4	Denmark	4	2x109.6MHz	2x27.4MHz	3’954.0	35584
5	Estonia	3	2x51.6MHz	2x17.2MHz	651.2	11628
6	Finland	6	2x70.8MHz	2x11.8MHz	4’044.0	56497
7	France	3	2x74.4MHz	2x24.8MHz	35’922.3	482527
8	Germany	4	2x80.0MHz	2x20.0MHz	56’245.0	702500
9	Greece	3	2x45.0MHz	2x15.0MHz	7’962.0	175556
10	Hungry	3	2x68.6MHz	2x22.9MHz	4’968.0	71429
11	Iceland	6	2x69.6MHz	2x11.6MHz	235.4	2874
12	Ireland	3	2x62.4MHz	2x20.8MHz	2’800.0	44872
13	Italy	4	2x71.6MHz	2x17.9MHz	48’698.0	678771
14	Lithuania	3	2x43.4MHz	2x14.5MHz	932	20737
15	Netherlands	5	2x105.8MHz	2x21.2MHz	11’900.0	112476
16	Poland	3	2x48.8MHz	2x16.3MHz	10’050.0	204918
17	Portugal	3	2x41.8MHz	2x13.9MHz	7’977.5	188995
18	Romania	3	2x32.0MHz	2x10.7MHz	3’860.0	118750
19	Spain	3	2x64.2MHz	2x21.4MHz	26’494.2	411215
20	Sweden	3	2.75.0MHz	2x25.0MHz	6’867.0	90667
21	Switzerland	3	2x79.6MHz	2x26.5MHz	5’226.0	65327
22	United Kingdom	4	2x105MHz	2x26.3MHz	47’026.0	447619

Average per Country 2x67.71

Average per GSM Operator 2x18.8 MHz

**includes frequencies in 900 MHz, 1800 Mhz & E-GSM bands

Annexure IV – (ii)

(Allocation of Spectrum in Asia- Pacific Countries)

Sl. No.	Name of the Country	No. of GSM Operators	Total Frequency made available for GSM Service**	Average GSM Frequency per Operator	Number of Mobile Subscribers as on 2001 (in thousands)	Subscribers per MHz
1	China	2	2x45.0 MHz	2x22.5 MHz	144812	3217778
2	Australia	4	2x30.0 MHz	2x7.5 MHz	11169	370000
3	Hong Kong	6	2x84.1 MHz	2x14.0 MHz	5701.7	67776
4	Indonesia	3	2x25.0 MHz	2x8.3 MHz	5303	212000
5	Malaysia	5	2x90.0 MHz	2x18 MHz	7128	78889
6	Philippines	3	2x25.0 MHz	2x8.3 MHz	10568	420000
7	Singapore	3	2x37.8 MHz	2x12.6 MHz	2858.8	74074
8	Taiwan	6	2x75.2 MHz	2x12.5 MHz	21633	287234
9	Thailand	3	2x57.1 MHz	2x19.0 MHz	7550	131349

Source: TRAI

Average per country = 2*52.13 MHz

Average per GSM operator = 2*13.4 MHz

** includes frequencies in 900 MHz, 1800 MHz and E-GSM bands