

Foreign Reactions to U.S. Auctions: Implications for U.S. Bidders in Foreign Countries

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Abstract

In this study, we examine the implications of FCC Auctions for U.S. companies in foreign countries. We show that U.S. auctions will have the most detrimental effect on U.S. companies planning to serve the most attractive foreign markets. For moderately attractive markets, establishing a joint venture with a firm in the target country is crucial. The least attractive markets can become more attractive when their neighboring countries are served by U.S. companies. We discuss the foreign retaliation upon U.S. telecom auctions, U.S. companies' responses, the pressure from the U.S. Congress on the FCC, and FCC's strategies. We conclude by analyzing the foreign reactions to U.S. auctions, these reactions' implications on the FCC, and the offsetting trends. Finally, we recommend some strategies to FCC.

Keywords: telecommunication, telecom, telecommunication auction, spectrum, FCC

JEL classifications: D44, L96

1. Introduction

In this study, we examine the implications of FCC Auctions for U.S. bidders in foreign countries. First, we discuss the foreign retaliation upon U.S. telecom auctions, U.S. companies' responses, the pressure from the U.S. Congress on the FCC, and FCC's strategies. Then, we recommend some strategies to FCC.

Several previous studies examine telecommunication auctions. Klemperer (2002a) shows that, due to poor auction design issues, there have been several problems. For example, for auctions that have similar value, there were big differences in revenues. For example, in the European 3G mobile-phone license auctions, the revenues ranged from 20 Euros per capita in Switzerland to 650 Euros per capita in the UK. The author also discusses the problem of collusion between bidders. Basili and Fontini (2003) show that the UK government's revenue has been lower than the price paid by winning companies. Van Damme (2002) argues that the

anti-trust laws are too weak to combat anti-competitive behavior. The author finds evidence of communication between players which is in fact forbidden. Klemperer (2002b) discusses the issue of how to prevent collusive, predatory, and entry-detering behavior. The author contends that there is no perfect auction design that works for all countries or in all circumstances. Park, Lee, and Choi (2011) show that spectrum auctions do not negatively affect the mobile communications market. The authors recommend countries to consider telecom auctions to improve efficiency and transparency of the spectrum assignment process. Chattopadhyay and Chatterjee (2014) discuss the problems in telecom auctions in India. First, the rolling out of services has been very slow. Also, many rules tend to come up once the auction is over. Chattopadhyay and Chatterjee (2014) point out to the fact the there is much room for improvement in Indian auctions.

We hypothesize that the status of the existing telecommunication infrastructure explains a major part of the differences. We argue that governments' telecommunication regulatory policies protect their countries' interests, and the needs for protection and regulation vary depending on the maturity of their telecommunication industry. Therefore, we believe it is essential to categorize the countries into three groups according to the amount of existing telecommunication infrastructure: countries with most developed infrastructure (MDI), countries with moderately developed infrastructure (mDI), and countries with least developed infrastructure (LDI).

For this purpose, we use the number of telephone lines per 100 inhabitants (i.e. "teledensity") as our base line. This measure is the most available and "widely used (as) indicator of telecommunication well-being" (World Telecommunication Development Report, 75).

We classify countries having penetration rates less than 2 per 100 inhabitants and less than 1 million subscribers in 1992 as "least developed infrastructure" (LDI) countries. Examples of these countries are Congo, Nigeria, Ethiopia, Albania, Vietnam, Nepal, Kenya, Tanzania, Cambodia, Haiti, and Zaire. Countries with telecommunication penetration rates above 2 but below 30, or with more than 1 million telephone subscribers in 1992 are classified as "moderately developed infrastructure" (mDI) countries. Examples of countries in this group are Algeria, Mexico, Indonesia, India, China, Pakistan, Turkey, and Eastern European countries. About 50% of the countries belong to this group. Finally, countries with a telephone penetration rate above 30 in 1992 are classified as the "most developed telecommunication infrastructure" (MDI) countries. They represent about 20% of all countries in the world. Examples of MDI are Taiwan, South Korea, Singapore, Bahamas, Malta, Israel, Martinique, and the OECD member states, including the U.S., but excluding Mexico and Turkey (their penetration rates in 1992 were 7.54 and 16 respectively).

Besides the level of infrastructure, we believe that the commercial attractiveness of host countries is an important factor for companies' licensing application decisions. Because of that, we expand our classification to include three classes of market attractiveness for host countries as well: Strong/Positive, Moderate, Weak/Negative attractiveness. We examine how countries with different infrastructure development levels and different commercial attractiveness levels react to U.S. auctions.

In the coming sections, we contend that the countries with moderately developed infrastructure will be the costliest or most unreceptive to U.S. bidders in the wake of U.S. auctions. We also contend that entrance to the countries with most developed infrastructure is very difficult due either to strong pro-domestic policies or intense competitiveness of the environment. Therefore, we recommend U.S. companies to choose from several remedies in order to cope with the problems that arise in foreign auctions (due to the U.S. auctions). These remedies are: (1) to alter the FCC decision, (2) to enhance knowledge in foreign countries about auctions, (3) to form strategies that could lower foreign concerns, (4) to target communications market niches and form partnerships to lower negative responses from foreign governments and operators, and (4) to work with U.S. government and the ITU to set international licensing principles and auction standards.

The paper proceeds as follows: Section 2 discusses our commercial assessment and foreign reactions to U.S. Auctions. Section 3 discusses the policy implications. Section 4 concludes.

2. Commercial Assessment and Foreign Reactions to U.S. Auctions

With regard to the extent of the effects of auctions on U.S. companies, we summarize our assessments and U.S. companies' responses in Figures 1, 2, and 3. As a whole, it shows that:

- Although mDI are the majority of the highly attractive markets, they will be the costliest or most unreceptive in the wake of U.S. auctions. U.S. auctions will have the most detrimental effects on U.S. companies' ability to serve the most attractive opportunities abroad.
- Entrance to the moderately attractive MDI markets is very difficult due either to strong pro-domestic policies or intense competitiveness of the environment. Thus, establishing a joint venture with a firm in the target country is crucial. Markets that have low commercial assessment, such as the less attractive part of the LDI, can become more attractive when their neighboring countries are served by U.S. companies. The relatively big footprint of satellites means the marginal costs of providing service to areas that otherwise would be unserved would be very low when they are within the same footprint as other attractive areas.

In the next section, we will look at the policy implications of the FCC in face of the pressure from U.S. companies, from the Congress, and from the international community.

3. Policy Implications

The FCC will face pressures from U.S. companies as well as the U.S. Congress. The intensity of pressures from each group will depend on how much money and reputation are at stake. The implications for spectrum licensing outside the U.S. can affect U.S. companies' ability to compete on an equal footing with other companies in the host countries. Based on the expected foreign responses, U.S. companies need to form strategies to minimize negative results, with implications for the FCC. To the U.S. Congress, auctions are an efficient way to allocate spectrum. But, more importantly, auctions would bring billions of dollars to the

Treasury lowering the government's long standing and frequently denounced budget deficit. We suggest that the FCC urge the U.S. government to work with the ITU on the regulatory and technical aspects of auctions. Subcommittees on setting international licensing principles, standards, particularly auction standards, investigating the possibility of a global license, coordinating international regulatory policy should be formed at the ITU level. The FCC can play an instrumental role in this area as they have been successfully conducting terrestrial and satellite broadcasting auctions. Meanwhile, the FCC may need to consider delaying SATCOM international service auctions in the U.S. if there is strong opposition from the international community. They should work with the U.S. companies to persuade the Congress to safeguard U.S.' international relationships to strengthen U.S. companies' chances of obtaining SATCOM licenses elsewhere.

3.1. U.S. Companies' Responses to Negative Foreign Reactions and Their Implication on the FCC

3.1.1. Foreign Retaliation Upon U.S. SATCOM Auction

Despite the trend toward market approaches in telecommunications, many countries outside U.S. do not appear to meet the conditions for which auctions would enhance efficiency. The use of non-auction mechanisms such as negotiations with applicants may give foreign governments more revenues. Realizing this, rational mDI/LDI governments should be less likely to auction spectrum licenses. Furthermore, countries may prefer to use non-auction mechanisms so that they have more control over the selection criteria. Below, we will highlight the possible retaliatory measures that foreign governments may employ in response to U.S. auctions.¹

At best, a U.S. auction of satellite licenses could achieve domestic efficiency in allocating a scarce resource (satellite spectrum), generate revenue for the Treasury, and would have a neutral effect on the license opportunities for the U.S. companies outside the U.S. Given the possible negative foreign reactions to U.S. auctions; at worst, foreign governments may retaliate against the U.S. In fact, the downside risks under the worst case scenario can be quite devastating, possibly taking the following forms:

- Unrealistically high prices may be set for license awards to U.S. companies if foreign governments erroneously use the U.S. price as a floor for the value of their licenses. U.S. auctions may set an example for governments charging for spectrum. The practice of charging for the use of spectrum will continue no matter whether foreign governments choose to use auctions or non-auction mechanisms, and in some countries the latter licensing methods may yield much higher returns, too. However, there is a limit to willingness to pay. When the terms of licenses are short and the risk of non-renewal is high, the value of the license is lower, not higher. U.S. companies may also experience an increase in legal, administrative, and licensing costs for dealing with the whole variety of licensing procedures. If prices asked by foreign governments are too high, U.S. companies will find these markets unattractive and may decide not to enter them.

- Foreign governments may choose to be uncooperative in international negotiations. The U.S.' loss of bargaining chips in ITU negotiations can be detrimental to the success of the U.S. industry as with the case of the little LEOs, who did not get allocations from the ITU at WARC 95. Loss of negotiating power at future ITU meetings and other international conferences may mean high coordination costs for U.S. systems, delays in getting appropriate spectrum, and even loss of proposed spectrum. Such a loss on a broader scale could mean the loss of U.S. dominance, jobs, and business in this area.
- Foreign governments may choose not to grant any licenses or landing rights to majority foreign-owned companies. This would mean that the U.S. companies will have difficulty establishing footholds in target countries, especially in countries where nepotism is prevalent.²
- Host countries may limit purchases of U.S. hardware by host country's companies and agencies. Large international, U.S.-based companies that have established relationships throughout the world may have an advantage over smaller companies in entering into these markets. Some companies may by-pass some of these defensive countries if the markets are not attractive enough to bear the costs of entering them.

3.1.2. U.S. Companies' Responses and Their Implications for the FCC

U.S. companies must decide whether and how to face the challenge imposed by foreign communities in the event that the FCC proceeds with the auction of satellite spectrum. The choices are either:

- Alter the FCC decision.
- Enhance knowledge in foreign countries about auctions.
- Form strategies that could lower foreign concerns.
- Target communications market niches and form partnerships to lower negative responses from foreign governments and operators, and
- Work with U.S. government and the ITU to set international licensing principles and auction standards.

The misunderstandings associated with auction mechanisms may be lowered and some of the negative reactions to an FCC auction of satellite spectrum may be avoided as foreign countries become increasingly aware of different auction types and their characteristics. On the other hand, auction education may make some countries more aware that auctions may not fit them, and that higher prices can be obtained through non-auction mechanisms. Despite this caveat, U.S. companies and the FCC should actively sponsor conferences and workshops in developing nations to increase their knowledge about auctions and the present wave of regulatory reforms. Since the bulk of the most attractive markets, mDI countries, are most concerned with an auction's ability to incorporate different social welfare objectives, sponsoring teams of auction experts to different parts of the world to help with setup could be

a worthwhile long-run investment. Even the ITU has also been encouraged to "use its bully pulpit to educate regulators from around the world," (Dykewic, Satellite News, January 29, 6).

The main thrust of effort, however, should be to head off FCC auctions. The FCC must be forewarned that U.S. auctions will have far-reaching implications. Loss of U.S. bargaining chips in ITU negotiations could be detrimental to the success of the emerging satellite communications industry. As with the case of additional spectrum for simultaneous two-way communications for little LEO systems, U.S. companies need support to withstand European and Japanese opposition. Little LEO satellite systems proposed after the 1992 spectrum allocation are being thwarted by the lack of progress at WARC 95. The FCC, on behalf of some little LEO companies, proposed 7-10 MHz of additional spectrum but left WARC almost empty-handed. The lack of an allocation this year will mean a two-year delay, impeding the start of new services — a potential loss of U.S. dominance, jobs, and business worldwide. The plight of these companies is a small indicator of the repercussions of foreign reactions to U.S. companies and policies. Figures 1, 2, and 3 summarize the results on auctions, assessments, and U.S. companies' responses.

If the possibility of losing large numbers of potential markets were high given anticipated negative foreign reactions abroad, U.S. companies might lose interest in bidding on spectrum at home. Even if only companies at the margin of the bidding withdraw, the FCC could receive less revenue from the auction than it might expect based on auctions of spectrum for PCS and on the recent domestic DBS auction. Furthermore, U.S. competitiveness and status as a front-runner could suffer as a result of being excluded from foreign markets as other countries try to protect their companies and jobs.

While US companies are putting pressure on the FCC not to auction, the U.S. Congress is steering the FCC to the opposite direction. The following section discuss the background forces that drive the pressure from the U.S. Congress.

3.2. Pressures from the U.S. Congress

In May 1993 when the House Energy and Commerce Committee agreed to President Clinton's proposal to raise money to reduce the budget deficit by selling rights to publicly owned airwaves to the highest bidders, the whole concept of free airwaves was changed. Since then, the FCC has been very successful in using auctions for licensing spectrum for the new interactive video digital services (IVDS), broadband and narrowband personal communication services (PCS), and the direct broadcasting satellite (DBS) services. For just the domestic DBS auction, MCI was willing to pay \$682.5 million for their licenses. All five auctions together added a total of more than \$9.5 billion to the Treasury.

Even though the talk of more auctions has drawn the ire of practically all companies interested in obtaining spectrum licenses, the FCC is again considering auctioning other parts of the spectrum such as those for digital audio radio services (DARS). With the astounding and excellent result, one of the Commissioners once commented that it would be foolish for them not to use auctions. Even if the FCC does not want to auction licenses, the Congress may order the FCC to use auctions and "the FCC may have no choice in that matter," (Space Business

News, Feb. 21, 1996, 6).

3.3. FCC's Strategies

The FCC will balance the cost and benefits of auctions. The net effect of a U.S. SATCOM auction is a possible diminution of opportunities for and thus a hampering of the growth of the U.S. manufacturing and service industries. U.S. companies who have invested heavily in transnational technology may not expand across international boundaries or not to the extent required for economic feasibility. Thus, U.S. companies may have to accept lower profits, and employment could stagnate when the competitive edge is lost. This risk in the global satellite communications field must weigh heavily against the potential efficient allocation gains and additional government revenue from U.S. satellite spectrum auctions.

The other parts of the world are watching U.S. actions, and they would like to extract profits from the spectrum. But as Peter Stenzel, vice president of Odyssey Telecommunication International Inc., pointed out, inconsistent and conflicting licensing rules from one country to the next would lead to substantial delays in implementing new services (Satellite News, Jan 29, 1996, 6). In fact, Scott Harris formerly with the FCC also recognized the existing problems and the need for ITU to "educate regulators from around the world" (Satellite News, Jan 29, 1996, 6). Given that the FCC has successfully conducted terrestrial and direct broadcasting satellite spectrum licenses, it can play an instrumental role in providing expertise in this area. Therefore, to correct the misconception stated in section III and to facilitate the change of attitude towards auctions, the FCC should urge the U.S. government to work with the ITU on forming subcommittees on:

- setting basic principles for licensing new technologies,
- setting international licensing and auction standards such as eligibility of application, buildout requirements and the form of auctions,
- coordinate auction policy with foreign countries, particularly with those high demand mDI markets and the vocal European countries, and
- evaluate possibilities of holding an international auctions for orbital position (as privately suggested by officials at the ITU).

The success of the efforts on setting auction standards and licensing principles relies heavily on the willingness of individual countries to be bound by the proposed rules. Collaborating with the mDI through partnership or arrangement of offering services may help to lower their concerns as late comers and draw them closer to the U.S.; however, coordination with the vocal European countries on auction policy may not produce fruitful results because their opposition stems from the fear of losing competitiveness to U.S. Even if foreign countries are willing to be bound by the licensing principles, auction standards will not do any good if foreign countries choose non-auction mechanisms.

The idea of having a global licensor to carry out the licensing work is worth investigating. First, it is easier to equip a global licensor, the representative of all nations, with auction expertise and computing resources that are required by a successful than to equip individual countries all over the world. Second, handling the procedure under a single umbrella would guarantee standardized auction and other licensing procedures, and this, in turn, would

decrease the overall nationalistic influences from individual countries. Third, as a whole, this would mean more allocation efficiency and a significant decrease in attorney fees, administrative fees, and licensing time. Nevertheless, this idea is not without problems. The following are some of the issues that have to be addressed carefully before the implementation of global licensing:

- How should this licensor grant the licenses?
- What type of licenses can the global licensor grant?
- How will individual countries regulate the licensees' transmission?
- How will the global licensor incorporate the different needs of individual countries?
- How should the profits from licensing be allocated? Some suggest establishing a telecommunication fund for building infrastructure in developing nations.
- Is there a need for reallocation of existing users? If so, what would be a fair way to allocate orbital slots?

It will take time for the international community to consider alternatives. Meanwhile, the FCC should consider delaying international services SATCOM auctions in the U.S. if there is strong opposition from the international community. If auctions were used by a smaller and economically less threatening nation, foreign countries may better appreciate the positive aspects of auctions. As more and more countries outside the U.S. use auctions for terrestrial licenses, the misconception about auctions should decrease. So, the FCC and U.S. companies should work together to oppose the Congressional pressure to auction spectrum for international satellite communication. Doing so will not only safeguard U.S.' international relationships but also U.S. companies' chances of obtaining licenses elsewhere.

4. Conclusions

4.1. Foreign Reaction to Auctions

Because satellite communications services and terrestrial communications differ in important ways, auctions of international satellite communications (SATCOM) licenses in the U. S. could significantly distort the communications market. A U.S. auction could retard the global momentum towards using auctions and prove debilitating for U.S. companies desiring to provide global service because foreign countries may react negatively to U.S. auctions. There are several roots for the potential negative reactions:

- One set of fears is based on the prospect that U.S. auctions will be successful at achieving their proponents' ideals. If auctions do succeed in awarding licenses quickly and efficiently to an operator with the highest and best use for the spectrum, this will establish a strong competitor in the satellite operator business early in the sequence of international license awards. The U.S., by rapidly awarding licenses with auctions, could preemptively create a "worldwide mandate" on standards and services and thus lead to U.S. domination of emerging technologies.
- Misperceptions about auction processes will spawn additional fears that U.S. companies will not act in the interests of domestic welfare. Auctions are perceived in some cultures as crassly materialistic, sacrificing the public's welfare.

- The auctioning of spectrum appears to be contrary to the Act of 1934 and to international norms in the ITU regarding the use of space for the good of all humankind. The apparent inconsistency could have important consequences in future WARC meetings when the U.S. requires the cooperation of other countries to obtain allocations desired by U.S. industry. The perception of lack of cooperation with international norms on satellite spectrum may not engender the desired cooperation on newer issues.

This problem is aggravated by the fact that the most attractive economic markets for satellite communications are those that present the highest political and cultural hurdles if auctions are used in the U.S. Those countries may either prohibit or restrict U.S. from serving those markets or may realize that by employing non-auction mechanisms they can extract even larger rents from U.S. companies than they could with the use of auctions. This will be especially true for those countries where the underpinnings do not exist for an auction to successfully and efficiently allocate licenses. In addition, countries that allocate licenses following allocations by many other countries will be at a disadvantage with auctioning spectrum. In those cases, non-auction mechanisms may be the best means of selling spectrum.

4.2. Implications of Foreign Reactions on the FCC

Notwithstanding the benefit to the Federal Treasury, a public policy to auction U.S. satellite licenses should be viewed as risky for U.S. companies and their employees given the small upside potential and large downside potential. At worst, a U.S. auction of international licenses could induce foreign licensing authorities to initiate retaliatory actions against U.S. applicants based either on misconceptions of the intent of U.S. regulators or on an informed fear that auctions will produce a stronger U.S. competitor in world markets. At best, a U.S. auction of satellite licenses could allocate domestic resources efficiently, and contribute to a reduction in the federal deficit, but would have a neutral effect on the license opportunities for U.S. companies outside the U. S.

The FCC is caught in the horns of a dilemma. If the U.S. auctions international spectrum licenses, U.S. companies could face burdens due to the international community's reaction against

U.S. insensitivity, U.S. dominance in SATCOM, and lack of U.S. cooperation in the global telecommunications community. At the minimum, other countries could start charging for spectrum following the U.S. precedent. However, the use of non-auction mechanisms in the U.S. does not prevent other countries from using auctions for licensing. On the other side, if the FCC does not auction spectrum, Congress will press for the use of auctions to raise revenue.

4.3. Offsetting Trends

Nevertheless, current trends toward the use of market mechanisms as indicated by the increased use of auctions and the privatization movement could reduce the magnitude of the effects outlined above. In fact, the trend is toward increased use of auctions. Australia, Argentina, Colombia, Egypt, Greece, Hungary, India, Mexico, New Zealand, Poland, United Kingdom, and the U.S. have used auctions in non-SATCOM licensing already. Currently, the

European Community is considering using auctions for non-SATCOM licenses. We expect that foreign countries will more greatly appreciate the value of auctions in the future, thus enabling companies to compete in open markets. Moreover, if major changes occur in the settlement system, the opposition to U.S. companies and an FCC auction could diminish. While the charges are now split 50/50 between the countries involved, other schemes are being considered including an "originator takes all" settlement plan. Such plans are not being favorably received by many smaller countries; however, change is likely given the progress being made on multilateral trade negotiations and the desire of providers in "originating" countries to reduce the costs to their customers.

4.4. Strategies for the FCC

The U.S. government should work with the ITU on setting licensing principles and auction standards regarding SATCOM licensing for new technologies, sponsoring workshops and conferences to educate the international community about auctions and designs that can achieve particular needs, and finding alternatives to the existing licensing procedures. If auctions are the preferred method, then international standards for auction rules and procedures should be supported and established at ITU. Given U.S.' expertise in the auction area, we should be instrumental in leading this process. However, if auctions are not the preferred means, setting auction standards at the ITU level would be useless. Education on auctions may help to lower the resentment towards U.S. auctions. But, it may also make other nations more aware of the fact that their countries may not have all the required conditions for successful auctions and that non-auction mechanisms may be more appropriate for licensing spectrum. A safer route would be coordinating licensing policy with moderately developed infrastructure countries to lower their late comer's concerns and bring them closer to the U.S. However, in the long run, promoting a global licensing auction in which auction and licensing rules are clearly laid out and all countries would participate has the most potential benefits.

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Figure 1. Implications of FCC Auctions for U.S. Companies in MDI Countries

Reaction by Foreign Govt.		Delay U.S., but use Auctions	
Rationale		Anti-Frontrunner but History of Market. Alloc. Adequate Competition; Will Impose Restrictions	
Commercial Assessment	Strong/ Positive		
	Moderate	X	X
	Weak/ Negative		
Response by Companies		Decrease bids at US auctions; enter MDIs very selectively.	

Notes:

1. Companies prefer an Administrative Allocation Mechanism in the U.S.
2. X denotes where the majority of the group falls in terms of strength of opportunity considering the market size and attractiveness relative to countries in other groupings.
3. The MDI group contains some strong market opportunities by virtue of the wealth of some of the nations, but there are also some very weak opportunities due to competition and incumbents. We classify the group as Moderate Opportunity relative to other groups.

Figure 2. Implications of FCC Auctions for U.S. Companies in mDI Countries

Reaction by Foreign Govt.		Use Non-Auction Methods	
Rationale		Desire Revenue. Prices. Revenue to Treasury.	Adopt US Auction. Protect Domestic Welfare. Loss of Revenue.
Commercial Assessment	Strong/ Positive	Market Opportunity X	Post-Auction Reception
	Moderate		
	Weak/ Negative		X
Response by Companies		Decrease bids at US auctions. High costs from US auction. Need alliances in mDIs.	

Notes:

1. Companies prefer an Administrative Allocation Mechanism in the U.S.
2. X denotes where the majority of the group falls in terms of strength of opportunity considering the market size and attractiveness relative to countries in other groupings.
3. The reception in mDIs will be more positive if the FCC does not use auctions, upgrading the reception to Moderate from Negative.

Figure 3. Implications of FCC Auctions for U.S. Companies in LDI Countries

Reaction by Foreign Govt.		Unpredictable	
Rationale		Want Revenue. But Need Communications Technology and Development	Concern for Prop. Rights.
Commercial Assessment	Strong/ Positive		X
	Moderate	X	
	Weak/ Negative		
Response by Companies		LDIs moderately attractive, unless physically in footprint with an attractive market.	

Notes:

1. Companies prefer an Administrative Allocation Mechanism in the U.S.
2. X denotes where the majority of the group falls in terms of strength of opportunity considering the market size and attractiveness relative to countries in other groupings.

Footnotes

1. The degree of retaliation depends on the type of businesses. In general, the operator business for private network will be more seriously affected by U.S. auctions than the manufacturing and broadcasting businesses. As an operator, a U.S. company will compete with local incumbents in host countries while as a manufacturer, a U.S. company is transferring technology to the locals. On the other hand, the effect of auctions on broadcasting operators would be small/minimal at the margin. This is especially true for television broadcasting because this business is extremely difficult to enter regardless of whether auctions are held.

2. For instance, in Indonesia, three major telecommunications firms are controlled through the Bimantara Group by Bambang Trihatmodjo, a son of Indonesian President Suharto (Noam, Komatsuzaki and Conn, 128). In India, there are persistent reports saying that Mahendra Nahata, executive vice chairman of Himachal Futuristic, "has benefited from close ties to Mr. Ram," Indian Communication Minister. His relationship with Mr. Ram may enable him to get out of penalties from insufficient funds to back up Himachal Futuristic Communications' bids (Jordan, The Wall Street Journal, October 6, 1995).