

SYSTEMS MARKETS AND ANTITRUST: COMPETITION ISSUES IN SELECTED INDUSTRIES

*SİSTEM PAZARLARI VE ANTİTRÖST: BAZI PAZARLARDA ÖNE ÇIKAN
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Abstract

This paper aims to explain the competition problems in industries where systems markets are apparent. In this context, an explanation of systems and system competition is provided while analyzing the specific features of systems markets that lead to questions and concerns in antitrust analysis. System competition in three industries, namely automotive, transgenic seed and air transport will be discussed to explain the common antitrust problems and solutions provided by antitrust authorities to strengthen competition in those markets.

Keywords: *System Competition, Systems Markets, Switching Cost, Life-cycle Costing, Intrasystem Competition*

Öz

Bu çalışma sistem pazarlarının mevcut olduğu endüstrilerde karşılaşılan rekabet sorunlarına açıklık getirmeyi hedeflemektedir. Bu çerçevede, sistemler ve sistem rekabeti açıklanmış, sistem rekabetinin rekabet analizlerinde yarattığı soru ve endişelere yer verilmiştir. Ayrıca, otomotiv, transgenik tohum ve hava taşımacılığı sektörlerindeki sistem rekabeti, rekabet otoritelerinin böylesi pazarlarda sıklıkla karşılaştıkları rekabet sorunlarını ve olası çözüm önerilerini ortaya koyması amacıyla örnek olarak tartışılmıştır.

Anahtar Kelimeler: *Sistem Rekabeti, Sistem Pazarları, Geçiş Maliyeti, Hayat Döngüsü Maliyeti, Sistemçi Rekabet*

INTRODUCTION

A simple definition of a system is collection of components working through an interface¹. A more comprehensive explanation offered by Gundlach and Moss defines systems as complex economic structures, involving “multiple complementary markets, transactional and relational links between buyers and sellers, and complex interoperability issues at key interfaces”². The traditional examples given in literature to explain systems are nuts and bolts and razor and

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¹ KATZ, M. and C. SHAPIRO (1994), “Systems Competition and Network Effects”, *The Journal of Economic Perspectives*, No:8(2), p. 93.

² GUNDLACH, G. and D. MOSS (2011), “Systems competition and challenges to antitrust thinking: An introduction”, *The Antitrust Bulletin*, No:56(1), p.1.

razor blades. However, with the advent of technology, science and communication, systems are increasingly common in every industry today. They are present in personal and business computing (applications and operating systems), automotive (automobiles and parts and service), agriculture (biotechnology and transgenic seeds), air transportation (alliances and hub and spoke system) and many other industries. The advent of systems brought about many issues that traditional antitrust analysis has difficulties in covering the technological aspect of the systems together with concerns about innovation, patent protection and network effects.

The goal of this study is to build on existing economic and legal analysis of systems to offer a detailed understanding of systems and system competition, while mentioning the frequent antitrust problems observed in systems markets in general. To this end, firstly features of systems markets will be discussed, then general questions and concerns that systems competition created in antitrust analysis will be explained. In the last part, systems competition in three industries, namely automotive, transgenic seed and airlines will be presented to shed light on common antitrust problems that authorities faced and the remedies offered to strengthen competition in those markets.

1. DIFFERENTIATING FEATURES OF SYSTEMS

Systems generally involve products that need future complementary purchases or complex interrelation among providers of a certain good or service. In any case, the differentiating feature of a complex system is existence of a “platform” by which different components communicate and interoperate. A platform is said to be “modular” if it enables substitution of components. The degree of substitution depends on the design of the “interface” between components and the platform³. Based on these definitions according to Rubin, system architecture involves two variables; ‘modularity’, determined by interface design and ‘openness’, which is established by systems operator’s access policies⁴. He argues, in fully open systems, operators provide open interfaces for modular components. This will enable multiple components work on the platform creating competition. In fully closed systems, no interface is available for components to operate. In real world systems, it is difficult to talk about full openness or closeness as systems exhibit features of modularity and openness at the same time⁵.

Therefore, antitrust analysis of systems necessitates distinction between component competition, which depends on modularity and access policies of

³ For detailed explanation of systems competition definitions see RUBIN, J. L. (2011), “The Systems Approach to Antitrust Analysis”, *The Antitrust Bulletin*, No:56(1), p. 16.

⁴ Rubin 2011, p.16.

⁵ Rubin 2011, p.16.

system operator and systems competition, which involves two or more systems. Farrell, Monroe and Saloner use systems competition to describe firms that compete on final products only and component competition to define firms that compete on intermediate stages of the final product, meaning components⁶. Rubin suggested that as two types of competition are concerned, component competition is by far the most complex and difficult one to analyze from an antitrust perspective⁷. Farrell, Monroe and Saloner give automobile bodies and engines as an example of firms competing on systems⁸. Firms in this industry have closed organizations that enable use of only some specified components. However, engines and bodies for large trucks represent examples of component competition as different firms working independently produce much of the products with a common understanding of how their products fit with each other.

According to Katz and Shapiro, competition in systems markets involves at least three issues: expectations, coordination, and compatibility⁹. Unlike products or services purchased individually, in systems markets consumers' purchase of components is spread over time, which means that consumers should cleverly expect the availability, quality and most importantly price of the components that they will be buying in the future. As it is difficult to change suppliers due to high switching costs¹⁰ involved in most systems markets, rational consumers need to take into account the future state of the market in advance. For example, when choosing an operating system for personal computer consumer needs to take into account availability and price of software that work only with that type of operating system. In such a case, systems that are already popular and have widely available software will be more popular for this very reason¹¹.

Systems markets involve issue of coordination among firms as well¹². In evaluating whether to invest in a new component, a firm must know whether the

⁶ FARRELL, J., H. K. MONROE and G. SALONER (1998), "The Vertical Organization of Industry: Systems Competition versus Component Competition", *Journal of Economics & Management Strategy*, No:7, p. 144.

⁷ Rubin 2011, p. 17.

⁸ Farrell et al. 1998, p. 145.

⁹ Katz and Shapiro 1994, p. 93.

¹⁰ Costs that arise when customers want to change suppliers. It can take the form of search and learning costs associated with new products, the risk customer takes in trying a new service, the compatibility issues (for example operating system-software compatibility may create switching cost if a customer wants to change existing system). For more information see YAZGAN, N. N. (2007), "Geçiş Maliyetlerinin Firma Davranışı ve Pazar Üzerindeki Etkileri: Ardılıpazarda Pazar Gücü", Uzmanlık Tezi, Rekabet Kurumu, Ankara.

¹¹ Katz and Shapiro 1994, p. 94.

¹² Katz and Shapiro 1994, p. 94.

existing system will support it or not. For example, the gains from developing a new operating system will be little, unless there is a wide selection of software to work on that system. In such a case, coordination and agreement among operating system and software developers are necessary to reach the right level of production capacity to survive in the market. This type of coordination, Katz and Shapiro argue, is generally extensive and explicit, involving long-term contracts, common ownership or standard setting tools. Additionally, the authors define another form of coordination in systems markets; coordination among consumers involving a “communications network”¹³. For example, by joining the public phone service, consumers’ benefit increases as more and more users obtain components of the system, enlarging the network of users. Another type of consumer coordination arises when customers buy a hardware today and related software or application to be used on that hardware in the future. As stated above, in deciding which hardware to buy, consumer tends to form expectations about availability and price of software. If economies of scale are present in software production, the large scale availability will depend on other customers’ hardware choice, creating “positive-feedback effects”¹⁴. These types of “network effects”¹⁵ most of the time complicate analysis of systems from an antitrust perspective.

A third issue arising in systems markets is compatibility; the possibility of a specific component working in multiple systems¹⁶. Razors using different blades, computers using different programming languages or software working on different operating systems are examples of incompatible components. Inherently, compatibility and the resulting open systems are viewed as preferable by antitrust authorities, but achieving and maintaining compatibility often limit product variety and innovation. Thus, antitrust intervention in systems markets involves questions about the right degree of variety and innovation, existence of switching costs and lock-in effects¹⁷.

¹³ Katz and Shapiro 1994, p. 94-95.

¹⁴ Katz and Shapiro 1994, p. 94.

¹⁵ Network effects: Effects that result in a product or service becoming more valuable for consumers as more consumers start using them. In other words, when network effect is present, the value of a product or service is dependent on the number of others using it (Competition Terms Dictionary, 2010, Turkish Competition Authority, Publication Number 0236, p. 86)

¹⁶ Katz and Shapiro 1994, p. 95.

¹⁷ When high switching costs are present, customers feel the need to stay with the current supplier, resulting in locked-in customer base for the supplier. For more information see Yazgan 2007.

2. SYSTEMS MARKETS AND ANTITRUST ANALYSIS

Specific features of systems markets affect antitrust analysis in a number of ways. Often, the complex nature of products and industries, the transactional relationships between buyers and sellers and issues of interface complicate even the case which would be a very simple one in single product markets.

Clearly, the main issue is definition of the market and the market power of the firms concerned. Customer's expectations about the price and quality of components that he will buy in future bring about the issue of "lifecycle costing"¹⁸. The key question that antitrust authorities face is whether the customer undertakes lifecycle costing, which means whether the customer has the resources and understanding about the components market before he decides to buy a certain system. Depending on the market and the nature of the products concerned, life cycle costing may be difficult to contemplate for an ordinary customer as these costs may include initial purchase price as well as costs associated with search for information, installation, maintenance, repair and upgrade. For example life cycle costing requires that a customer should take into account all the future repair and spare part costs when making his decision to buy a certain brand of car component. In cases where information about components or aftermarkets is widely available and customers in fact use this information to come up with life cycle costs, it is safe to assume that competition occurs at the level of systems and market definition can be based on this finding.

Coordination in primary market manufacturers and component suppliers is another issue that goes beyond the limits of traditional antitrust analysis. As discussed above, to reach an efficient scale of production, both manufacturers and suppliers need reliable agreements that will ensure the continuation of the system as a whole. Without a wide customer base, these agreements are typical vertical agreements between buyers and sellers of intermediate goods or services. However, when either the manufacturer or the component supplier acquires a substantial customer base, then issues of tying, excessive pricing, refusal to deal or other type of exclusionary practices may be the subject of complaints that antitrust authorities receive. The existence of network effects complicates analysis more, by bringing about issues such as the most efficient market structure and marketer conduct¹⁹. Here, in addition to a very careful market definition based on customer's expectations, detailed analysis of firm's pricing structure and relations with suppliers/buyers are required for a sound decision. If high switching costs

¹⁸ GUNDLACH, G. (2007), "Aftermarkets, Systems and Antitrust: A Primer", *The Antitrust Bulletin*, No: 52(1), p. 25.

¹⁹ Gundlach 2007, p. 24.

are present, lock-in effects and resulting market power in the aftermarket should also be taken into account²⁰.

3. ANTITRUST ISSUES IN SELECTED SYSTEMS MARKETS

3.1. Automotive Industry

Automotive is at the center of several discussions about competition in systems markets. As a car requires many additional components and services such as gasoline, maintenance, repair and spare parts to be useful, it is clearly one of the most cited examples in systems and aftermarket related antitrust issues. The growing use of intellectual property by car manufacturers in both spare part design and diagnostic tools has raised questions on competition between authorized dealers and independent ones in terms of intrasystem competition. As discussed above, issues like system access and modularity have created a grey area for antitrust authorities, where the positive and negative effects of intervention are very difficult to assess.

A recent study on automotive aftermarkets in the United States (US) stated that consumers pay 26.8% more for the parts they buy from dealers compared to those from independent repairers²¹. In addition, it is generally suggested that independents are more successful in satisfying customers through offering more convenient locations, acceptable prices and fast service²². However, as the manufacturing technology developed and expectations from a car increased, manufacturers started to design cars with computerized parts that necessitate advanced diagnostic tools to repair. Moreover, more and more parts are protected by intellectual property laws, as importance of efficient design became a competitive advantage for car manufacturers. Hawker, in his case study on automotive aftermarkets, suggested that there is considerable anecdotal evidence implying that independents actually are not able to acquire the information and diagnostic tools necessary for important repairs and thus lose customers to dealers²³. Even in the cases where access to information is theoretically possible, the questions about the cost and quality of training became important. Are manufacturers providing the diagnostic tools at a ‘reasonable price’ to independents? Does the training provided by manufacturer match the one for dealers in terms of quality and breadth of information?

These are very tough questions to be answered by a competition authority given the technical aspects and intellectual property side of the analysis. A

²⁰ For a detailed discussion on switching costs and aftermarket power see Yazgan 2007.

²¹ Automotive Aftermarket Industry Association, Vehicle Repair Cost Analysis: New Car Dealerships vs. Independent Repair Shops (2009) cited in HAWKER N. W. (2011), “Automotive Aftermarkets: A Case Study in Systems Competition”, *The Antitrust Bulletin*, No: 56(1), p.61.

²² See Hawker 2011, p. 62 for detailed information on customer satisfaction in independent repairers.

²³ Hawker 2011, p. 64.

possible approach could aim at finding an answer to the main question: Do use of information technology and intellectual property protection aim at limiting competition and increasing profits of manufacturers and dealers at the expense of consumers²⁴? As literature suggests, in the absence of rational expectations about aftermarkets, market power is possible in aftermarkets where primary market is actually fairly competitive²⁵.

Coppi stated that in general consumers have a kind of myopia when considering purchase price of primary product without analyzing aftermarket costs in detail²⁶. Therefore, as a general rule antitrust analysis should involve a detailed evaluation of primary and aftermarket players, switching costs, cost of access to information and pricing policies of firms concerned.

To prevent customer dissatisfaction and opportunistic behavior by car manufacturers and dealers in aftermarkets the Motor Vehicle Owners Right to Repair Act of 2010 was introduced in the US Congress to address the issue of access to information by independent repairers²⁷. The bill aimed at forcing automobile producers to provide equal access to independent repairers in terms of tools, training and part pricing. The legislation empowers Federal Trade Commission (FTC) for enforcement and rulemaking in this field. A similar legislation, Access to Repair Parts Act was introduced in 2009, to address problems created by design patents in repair parts²⁸. European Parliament adopted a similar proposal in 2007, but faced strong resistance from automotive industry and its enactment into law still remains in doubt²⁹.

3.2. Transgenic Seeds Industry

The change in the demand structure and governmental subsidy policies led US farmers' widespread adoption of corn, cotton and soybean in the last twenty years. As these plants have proved to be very suitable for genetic research, rapid innovation in transgenic seed field is followed by huge implications in the seed market.

Transgenic seed is a modified seed that contains certain desirable input and/or output traits³⁰. These traits include tolerance to herbicides or resistance to insects.

²⁴ Hawker 2011, p.73.

²⁵ For a detailed literature review on theories on aftermarket power see Yazgan 2007, p.42-48.

²⁶ COPPI, L. (2007), "Aftermarket Monopolization: The Emerging Consensus in Economics", *The Antitrust Bulletin*, No:52(1), p. 57.

²⁷ S. 3181, 111th Cong. (2010) cited in Hawker 2011, p.76.

²⁸ H.R. 3059, 111th Cong. (2009) cited in Hawker 2011, p 77.

²⁹ Resolution of 12 December 2007 on the Proposal for a Directive of the European Parliament and of the Council Amending Directive 98/71/EC on the Legal Protection of Designs (COM(2004)0582-C6-0119/2004-2004 /0203(COD)) cited in Hawker 2011, p. 77.

³⁰ MOSS, D. (2009), "Transgenic Seed Platforms: Competition between a Rock and a Hard Place?",

Output traits involve the features of plant's output such as longer shelf life or a desired chemical balance³¹. Especially concerning the input traits, US market is highly concentrated; with Monsanto, the dominant firm and Pioneer (DuPont), Syngenta, Dow and Bayer are the rest.

Transgenic seed plantation is very common in the US; different seed varieties were planted on ninety-one, eighty-eight, and eighty-five percent of all soybeans, cotton, and corn acres in 2009³². The reason behind the rapid growth of market is the productivity gains and the need for fewer inputs farmers observed while using modified seeds. As the market is highly concentrated and demand for regular seed has been rapidly decreasing, transgenic seed market became an interest for academicians and concern for the US antitrust specialists as well.

Similar to pharmaceutical industry, transgenic seed market is also characterized by a strict regulatory regime, long approval times and high R&D cost. In general, process of developing new varieties can take ten to fifteen years and the bulk of the R&D expenditures is incurred in the plant breeding stage which accounts for nearly 40% of the final seed price³³. Actually, the current competitive structure of the market is the result of firms' desire to achieve economies of scale and scope in costly R&D. Industry observed large mergers in the mid-1990s through early 2000s which aimed at (1) vertically integrating innovation with plant breeding R&D and distribution and (2) horizontally expanding the seed variety of individual firms³⁴. These mergers created complex systems in transgenic seed markets, where a dominant firm, Monsanto, operating at various levels of the system, created antitrust concerns.

According to Moss, a seed system includes, at least two complementary markets; an upstream market for genetic traits and a downstream market for traited seed³⁵. The upstream market is highly concentrated with Monsanto accounting for over 90% market shares in trait varieties whereas downstream traited seed markets are less concentrated due to traits licensing practice to independent seed companies and other integrated seed companies³⁶. The demand structure in the industry necessitates firms in different levels of the system to cooperate;

The American Antitrust Institute, 23 October 2009, p. 3.

³¹ HAYENGA, M. L. (1998), "Structural Change in the Biotech Seed and Chemical Industrial Complex", *AGBIOFORUM*, p. 43 cited in Moss 2009, p.3.

³² *Acreage*, U.S. DEPT OF AGRICULTURE, NATIONAL AGRICULTURE STATISTICS SERVICE, JUNE 30, 2000-JUNE 30, 2009, cited in MOSS, D. (2011), "Competition and Transgenic Seed Systems", *The Antitrust Bulletin*, No: 56(1), p. 83.

³³ CORNEJO, J. F. (2004), *The Seed Industry in U.S. Agriculture*, U.S. Dep't of Agriculture, Economic Research Service, Agriculture Information Bulletin No. 786, at 4 cited in Moss 2011, p. 83.

³⁴ Moss 2011, p. 90.

³⁵ Moss 2011, p. 92.

³⁶ Moss 2011, p. 93.

currently, stacked traits, which are multiple traits combined in one seed, present the greatest potential in the market. Thus, firms need to combine their own traits or their traits with rivals' traits which brings up patent protection and licensing issues. As Monsanto traits are the dominant ones in the market, the issue centers around whether Monsanto gives access to its platform through licensing or not.

Antitrust complaints in the US, thus, centered around Monsanto's monopolization of the markets for genetic traits and/or traited seed³⁷. In many of the past cases, Monsanto was accused of exclusionary practices, including exclusive dealing arrangements that penalize seed companies that license traits other than Monsanto's. In addition, Monsanto's bundling practices, involving financial penalization of seed companies for selling less than a minimum percentage of seed containing Monsanto traits, were also investigated. In *Monsanto Co. vs. E.I. DuPont de Nemours and Co*³⁸, other types of anticompetitive tactics were discussed such as anti-stacking restrictions in licenses or agreements that restrict partner's licensing of technology outside the agreement. For example, DuPont in its counterclaim regarding the recent agreement between Monsanto and Dow to create a stacked corn seed, alleges that Dow is prohibited from permitting Pioneer (DuPont) to sub-license its insect resistant trait³⁹.

US Department of Justice (DOJ) actually has been aware of the increased level of market power, importance of intersystem competition and rival access to Monsanto's patents in transgenic seeds market. In the last ten years, DOJ took action in two major transactions that Monsanto involved; mergers with corn firm *DeKalb* and cotton giant *Delta and Pine Land*. In *DeKalb* the agency required the divestiture of Monsanto's agrobacterium-mediated transformation technology for corn and obliged the company to license corn germplasm to seed company customers to facilitate introduction of new transgenic traits in corn⁴⁰. In *Delta and Pine Land*, Monsanto agreed to the divestiture of cotton seed assets, several lines of cotton germplasm, and the removal of restrictive provisions in Monsanto technology licenses to enable rival biotech developers to stack Monsanto with non-Monsanto traits⁴¹.

³⁷ As examples of cases see *American Seed Co., Inc. v. Monsanto Co.*, 238 F.R.D. 394 (D. Del. 2006) and *Monsanto Co. v. Syngenta Seeds, Inc.*, 443 F.Supp.2d 648 (D. Del. 2006).

³⁸ *Monsanto Co. vs. E.I. DuPont de Nemours and Co.*, 4:09-cv-00686 (E.D. Mo., May 4, 2009).

³⁹ *Monsanto v. DuPont*, No. 4:09-cv-00686 (E.D. Mo. June 16, 2009), Defendant Answer and Counterclaims at 38-39.

⁴⁰ For details see DOJ (1998), "Justice Department Approves Monsanto's Acquisition of DeKalb Genetics Corporation: Divestiture of Transformation Technology Rights and Licensing of Corn Germplasm Implemented", http://www.justice.gov/atr/public/press_releases/1998/2103.htm, Date Accessed: 02.11.2011.

⁴¹ *U.S. v. Monsanto and Delta and Pine Land*, "Competitive Impact Statement" (Case No. 1:07-cv-00992, D.D.C.) (May 31, 2007), <http://www.justice.gov/atr/cases/f223600/223682.pdf>, Date

Moss argues that to overcome the current antitrust crisis in transgenic seed it is necessary to achieve a resolution between patent law and antitrust law⁴². She continues by stating that the courts and DOJ frequently face with questions as to whether restrictions on the use of technology (e.g., anti-stacking provisions) exceed the scope of patent, creating antitrust concerns. In terms of mergers, Moss also questions the desired amount of divestiture to create an ‘effective competing platform’. She argues, “*In Delta and Pine Land, for example, a package of divestitures to a smaller incumbent (Bayer) in traited cotton seed could be interpreted as an attempt to create an “alternative” cotton platform. However, whether that platform has replaced the competition lost in the merger is an open question.*”⁴³

3.3. Airlines Industry

Airline alliances can be defined as agreements between domestic and foreign airlines enabling them to share revenues, coordinate prices, scheduling and code sharing (allowing baggage transfer on connecting flights)⁴⁴. In the last twenty years airline industry experienced a strong wave of alliance formation due to increased demand by customers for international service. The reason behind the formation of alliances instead of mergers was to overcome the foreign ownership restrictions of national airlines⁴⁵. As mergers between national airlines of different countries would mean losing of nationality in terms of ownership and voting rights, airlines developed alliances to circumvent ownership restrictions and offer service in new lines that connect national routes with international ones. Today, three alliances dominate the market; (1) SkyTeam—a thirteen-carrier alliance led by Air France/KLM and Delta; (2) Oneworld—a twelve-carrier alliance dominated by American Airlines and British Airways; and (3) Star—a twenty-seven-carrier alliance dominated by three American carriers (Continental, United, and U.S. Airways) and Lufthansa⁴⁶.

According to Reitzes and Moss, airline alliances provide parties nearly the same benefits as those of a merger, only without transferring ownership rights⁴⁷. As

Accessed: 02.11.2011, p.12-21.

⁴² Moss 2009, p. 28.

⁴³ Moss 2009, p.29.

⁴⁴ REITZES, J. and D. MOSS (2008), “Airline Alliances & Systems Competition”, *Houston Law Review*, No:45, p. 295.

⁴⁵ SCHLANGEN, C. N. (2000), “Comment, Differing Views of Competition: Antitrust Review of International Airline Alliances”, *University of Chicago Legal Forum*, Accessed through LexisNexis on 25.11.2011, p. 416.

⁴⁶ HAND, R. W. (2011), “Continental Joins the (All)Star Alliance: Antitrust Concerns with Airline Alliances and Open-Skies Treaties”, <http://www.hjil.org/wp-content/uploads/2011/10/Hand-Web.pdf>, Date Accessed: 23.11.2011, p. 648.

⁴⁷ Reitzes and Moss 2008, p. 294.

both European Commission (EC) and the US antitrust rules prohibit coordination of pricing and scheduling among competitors, alliances raised questions with regard to the level of cooperation among members and costs and benefits to the society. These questions were eliminated through generous antitrust immunities granted to alliances by the US Department of Transportation (DOT) and the EC⁴⁸.

Before discussing competition restrictions created by alliances, it is important to mention the benefits that they provide to the consumers. Through ease in the booking process and integration of ticketing and baggage handling procedures, customers feel like they bought their ticket from one airline for an international flight, although the route involves multiple airlines in several hubs. For example⁴⁹, assume a passenger would like to fly from El Paso to Florence. If passenger uses members of the same alliance, the route will involve hubs of dominant airlines in each country. Therefore, the itinerary will look like 1) El Paso-Houston, 2) Houston-Paris, 3) Paris-Florence. The passenger will check in only once and his baggage would be automatically checked through to the final destination. Moreover, passenger will be able to earn frequent-flyer miles for the whole trip.

Hand states that this itinerary is the result of international airline alliances and systems competition⁵⁰. The hub and spoke system, where each major airline dominates a city's hub and offers service to destinations all over the country, was born because of the foreign ownership restrictions and competitive behavior in domestic markets⁵¹.

The main competition restraint produced in the alliance system is the large carriers' intent to drive low cost carriers from the market. Because of the high interlining fees that dominant hub carrier charges to non-alliance airlines for connecting flights using that hub, it is generally unprofitable for non-alliance members to access the hub market of the alliance partners⁵². Moreover, every connecting passenger who comes to hub airport flying by an alliance member creates revenue for hub airline, thanks to the revenue sharing agreements between alliance members⁵³.

A revenue sharing agreement is generally called a joint venture among airlines⁵⁴. The goal of the joint venture is to achieve “*metal neutrality*”, a

⁴⁸ Hand 2011, p. 644.

⁴⁹ Example from Hand 2011, p. 650.

⁵⁰ Hand 2011, p. 651.

⁵¹ HEDLUND, D. (1994), “Note, Toward Open Skies: Liberalizing Trade in International Airline Service”, *Minnesota Journal of Global Trade*, Accessed through LexisNexis on 23.11.2011, p. 273.

⁵² Reitzes and Moss 2008, p.311.

⁵³ Hand 2011, p. 654.

⁵⁴ KIMPEL, S. (1997), “Comment, Antitrust Considerations in International Airline Alliances”, *Journal of Air Law and Competition*, No:63, Accessed through LexisNexis on 11.21.2011, p. 478.

*commercial environment in which joint venture partners share common economic incentives to promote the success of the alliance over their individual corporate interests*⁵⁵.” Joint pricing and revenue sharing enable airlines to cooperate in pricing and scheduling and thus supposedly create an environment where airlines are “able to focus on gaining the customer’s business by providing the best available fare and routing between two cities.”⁵⁶ As airlines share revenue in gateway to gateway flights, they are indifferent as to which airline carries the passenger on that route. This clearly eliminates competition between alliance members who agreed to a joint venture on that select route. However, joint ventures are created only among select members of a large alliance. The US and European Union (EU) authorities provide immunity to this type of agreements as they improve airline efficiency, increase travel routes and thus decrease ticket prices⁵⁷. Yet, immunity decision is a very tough one, given the fact that joint venture eliminates competition rather than limiting it. Thus, benefits from immunity should be direct, clear and measureable and regular reviews by authorities might be necessary to decide whether the declared efficiencies have been achieved.

Reitzes and Moss argue that the possibility of collusion amongst national competitors is another serious concern in granting antitrust immunity⁵⁸. As immunity is only granted for international cooperation, when two or more US carriers become members of the same immunized alliance, “*anticompetitive spillovers into domestic markets*”⁵⁹ become a headache for DOT and DOJ. As explained above, very sensitive information such as pricing, capacity and scheduling is shared among airlines that have a joint venture agreement. Thus, it became very difficult to monitor the effects of joint ventures in terms of domestic routes. Moreover, as stated above, the transatlantic market today is dominated by three large alliances, as more and more national airlines become a member of an alliance. Therefore, as market became more concentrated, the risk of collusion and price fixing in international routes poses a great threat to competition.

As a legislative measure to increase antitrust scrutiny over immunities granted by DOT, House Resolution 831 was introduced⁶⁰. The bill empowers Government Accountability Office (GAO) to investigate the procedures employed by the DOT

⁵⁵ Show Cause Order to Amend Order 2007-2-16 so as to Approve and Confer Antitrust Immunity, Docket DOT-OST-2008-0234, order: 2009-4-5 at 4 (Dep’t of Transp. Apr. 7, 2009) cited in Hand 2011, p. 655.

⁵⁶ Show Cause Order to Amend Order 2007-2-16 so as to Approve and Confer Antitrust Immunity, Docket DOT-OST-2008-0234, order: 2009-4-5 at 4 (Dep’t of Transp. Apr. 7, 2009) cited in Hand 2011, p. 655.

⁵⁷ Hand 2011, p. 656.

⁵⁸ Reitzes and Moss 2008, p. 308.

⁵⁹ Reitzes and Moss 2008, p. 308.

⁶⁰ For details about the House Resolution 831 see Hand 2011, p. 675.

in granting antitrust immunity to alliances and joint ventures. Additionally GAO is held responsible for conducting studies to understand whether the immunized alliances created the declared benefits and whether these benefits could be achieved without immunity. The bill also accepts the similarity between alliances and mergers and suggests that granting immunity should be treated the same way as a merger. This implies empowering DOJ for antitrust scrutiny of alliance immunity cases. As a security measure, the bill also introduces an expiration date for immunity which brings about reapplication by firms and reevaluation of competitive structure of the market. Hand argues that the bill should be passed by Congress to eliminate many of the concerns related with the antitrust immunity cases⁶¹.

CONCLUSION

Today, many industries face the rise of systems mainly because of mergers or alliances among vertically related firms or direct competitors and increased use of intellectual property protection, resulting in access issues. As stated examples suggest, systems competition is a field where traditional tools of antitrust have been perceived as limited due to the tension between competition rules and interrelation between technological innovation, intellectual property protection, network effects and switching costs.

From the standpoint of antitrust authorities, analysis of systems competition requires a new outlook in evaluating antitrust problems from various perspectives. Depending on the case and previous experience of the authority with similar cases, the technical complexity of the issue may necessitate outside consulting to clearly understand the interrelation between components of the system and access issues. Moreover, the above mentioned aspects of systems competition, involving incentives to support R&D, tension between competition and intellectual property and market power created by network effects require a multidisciplinary approach in antitrust analysis. Thus, capability of an antitrust authority in utilizing its resources to achieve a desirable level of multidisciplinary insight will determine its success in intervention into systems markets.

Another important feature of systems competition is the time aspect of the analysis which is very apparent especially in aftermarket cases. Employing life cycle costing and taking into account customers' knowledge level in the primary market will prevent unnecessary action by antitrust authorities. Thus, rather than analyzing the current snapshot of the market, authorities are increasingly required to take strategic competition into account by analyzing market's situation over a longer term.

⁶¹ Hand 2011, p. 676.

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