Designing Alliance Contracts:
Exclusivity and Contingencies in Internet Portal Alliances

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We test theoretical propositions from the technology licensing literature and from the literature on information and control in alliances using a sample of over 100 Internet portal alliance contracts. The technology licensing literature suggests that one of the major factors driving firms' decisions to transact exclusively for an innovation is the magnitude or importance of the innovation. We find some support for this hypothesis, but find that exclusivity decisions in this setting also relate to other factors. The literature on information and control in alliances suggests that the use of verifiable performance measures to allocate state contingent decision rights depends on the level of information asymmetry between the two parties and on the precision of the information. We test these propositions by looking at how the timing of agreements (a proxy for environmental uncertainty) and exclusivity restrictions (a proxy for incentive conflict) impact the use of a subset of available performance measures. Consistent with the literature, we find that contracts involve fewer contingencies as industries have matured. Where incentive conflicts are potentially greater, more contingencies are used.

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1. Introduction

The design of inter-firm agreements, particularly in the face of a number of information asymmetries and uncertainty, has been one of the most vibrant areas of theoretical economic inquiry over the past two decades. Yet our empirical understanding about whether these arrangements are designed and work in a manner that is consistent with theory has lagged. This relative neglect reflects the complexity of the arrangements, the difficulty in accessing data, and the challenge of developing clean tests of theoretical predictions.

This paper is part of an ongoing investigation into contracting by Internet portals. In this paper, we analyze two aspects of the design of inter-organizational agreements: the provisions regarding the exclusivity of the contracts and the use of contingencies (by which we mean provisions that give one party or the other certain control rights in specific states of the world).

Both topics have received extensive theoretical scrutiny, but very little empirical attention. A substantial theoretical literature on the transfer of technology between firms has examined the question of exclusive *vs.* non-exclusive licensing. As discussed below, the depictions of these transactions rely on a diverse set of assumptions about the essential problems that the contracting firms face. Meanwhile, the question of contractual incompleteness has gained increasing attention in incomplete contracting theory. While this theory has typically assumed that complete contracts *cannot* be

written, more recent extensions of this approach have suggested that under certain circumstances, contracts may be left intentionally incomplete.

Despite the desirability of testing the various theoretical depictions—not to mention the important role that alliances and licensing play in many high-technology industries—the structure of these agreements has attracted surprisingly little empirical attention. Portal contracts are a particularly attractive empirical testing ground for three reasons:

- First is the large number and heterogeneous nature of the contracts. Hundreds of consumer-oriented Internet companies went public during the second half of the 1990s. Many of these completed IPOs while still in their formative stages. Many incumbent companies also launched Internet initiatives. As a result, the contracting parties ranged from well-established corporations to very young entities.
- Second, the standards for disclosure in this industry have been high. Publicly traded entities are required to file all "material" contracts. Due to the relatively limited revenues of many portals and other Internet concerns and the significant impact that announcements concerning alliances have had on these firms' share prices, the disclosure of agreements during this period was extensive. While firms could request confidential treatment for portions of the alliance agreements, their failure to disclose might become an issue if the firm was subsequently subject to shareholder litigation.

- The final attractive aspect is the mapping between the contracts themselves and economic theory. These agreements carefully delineated ownership, exclusivity, and other provisions that have typically been examined in the theoretical depictions of contracting.

This paper examines two different sets of decisions by the contracting parties. The first set of decisions is the level of exclusivity agreed upon between the two parties. The analysis suggests that exclusivity is present more frequently when asymmetries between the parties' market positions are greater. The data are consistent both with the standard view of exclusivity presented in the technology licensing literature, and with the view that exclusivity is allocated in a similar way to control rights, *i.e.*, that bargaining power matters.

The second set of decisions involves the use of specific performance measures in alliance contracts. Recent attempts to extend control theory using a signaling framework has suggested that agents will increasingly rely on contingent elements in contracts as uncertainty increases, as part of an effort to distinguish themselves from other firms. The observed pattern of contracting in our sample—where partners in younger segments of the Internet industry include more state-contingent provisions—is consistent with this view, though in some ways the picture is more complex than theory suggests.

There is a relatively modest body of related empirical literature to this paper. Hall [1991] examined nearly 100 contracts across a spectrum of high-technology industries.

The analysis sought to test predictions from his model, which had hypothesized relationships between the exclusivity of the agreement, the strength of intellectual property rights, and the use of royalties. Ryall and Sampson [2002] clinically examine the nature of contractual language regarding alliances in several dozen biotechnology and electronics agreements. Robinson and Stuart [2002] examine 125 biotechnology alliances, including a measure of "information content" based on the length of the summary prepared by the consulting firm Recombinant Capital. Finally, in Elfenbein and Lerner [2003], we used this data set to examine the allocation of ownership and control. We found support for the basic propositions of incomplete contracting theory (Grossman and Hart [1986] and Hart and Moore [1988]) and also for an extension (Aghion and Tirole [1994]), which suggested that property rights might be allocated inefficiently when one party was capital-constrained and possessed limited bargaining power.

The plan of this paper is as follows. In Section 2, we review the relevant theoretical economics research, which frames the empirical analyses. In Section 3, we provide a brief overview of Internet portals and the alliances into which they enter. In Section 4, we discuss the structure of the alliance contracts. We describe the creation of the data set in Section 5. Section 6 presents the analyses, and the final section concludes the paper.

2. Theoretical Predictions

A. Exclusivity in Alliances

A substantial body of work examines the licensing of intellectual property and research joint ventures. This literature relies on a diverse array of assumptions and suggests a variety of empirical implications.[1] Within this literature a number of theoretical models have been developed to investigate the *design* of technology licensing contracts.

The general set-up of these models is as follows. An inventor has developed a new technology that he cannot commercialize himself. To maximize the quasi-rents from this innovation, the inventor chooses three strategic variables that define a contract or contracts. The three strategic variables are the number of contracts, the magnitude of a fixed (or non-contingent) fee, and a function linking royalties (contingent payments) to the output resulting from the buyer's use of the new technology. The inventor is said to license the technology exclusively if he offers a contract to a single licensee and commits himself not to offer additional license contracts to others.

More specifically, Arrow [1962] developed the first theoretical treatment of the design of licensing contracts. Assuming complete information and full appropriability of the innovation, Arrow's analysis shows that incremental technologies should be licensed

[1]Much of this work has focused on the question of how the option to license discoveries (as well as to engage in joint ventures before R&D has been undertaken) affects firms' decisions to pursue innovations. While this question is an interesting one, it is less relevant to our analysis.

non-exclusively with royalties whereas drastic technologies[2] should be licensed exclusively using only fixed fees. Following Arrow's treatment, the literature has investigated a number of different types of market imperfections. Kamien and Tauman [1986] consider a setting where an inventor is licensing a discovery to a number of potential users under full information. In a setting where firms have some market power (*i.e.*, under Cournot competition), the inventor should only license the most drastic innovations on an exclusive basis. In these cases, the author suggests, the inventor should sell the invention for a flat fee. Gallini and Wright [1990] relax the assumption of full information, and reach a diametrically opposite conclusion: when the inventor has private information about the value of the invention, he will always ask for an output-based reward. In a case of an innovation that can be readily imitated, they suggest that the inventor will license the invention on either an exclusive or non-exclusive basis and receive a linear share of the revenues from the discovery. A major innovation that is difficult to imitate, they predict, will be licensed exclusively with an increasing royalty rate as sales rise. Although these models generate different predictions about the payment structure of technology licensing contracts, they each agree that the increasing importance (or magnitude) of the innovation will lead to the firm being more willing to license the technology exclusively.

Several other theoretical treatments of technology licensing generate predictions that are more difficult to test with our data. Hall [1991] considers the impact of moral

[2]By Arrow's definition, a drastic innovation is an innovation that reduces costs sufficiently to confer a *de facto* monopoly on the producer that uses it. An incremental technology does not.

hazard problems: in particular, the possibility that the licensor will undertake a subsequent license of a close substitute to another licensee. In the absence of moral hazard, he suggests, a result similar to that discussed by Kamien and Tauman will hold. Once moral hazard is introduced, however, the result changes. When royalties are employed, the temptation for the licensor to license a similar technology to another party is greatly reduced. Hall predicts that royalties should be used in some—though not in all—exclusive and non-exclusive licensing agreements.

The literature on the optimal structure of license contracts also investigates a number of other types of market imperfections, including incomplete appropriability of the innovation (Anton and Yao [1994]) and the importance of tacit information in generating a valuable innovation (Arora [1995]). In this study, we unfortunately do not have good proxies for these imperfections and thus are unable to test the hypotheses that these models generate.

B. The Use of Contingencies

The theory of incomplete contracts has been used to address a number of important questions about the boundaries of organizations and the design of relationships between firms. A standing critique of this literature, articulated by Tirole [1999], is that contractual incompleteness is too often *assumed* and that consequently little progress has been made in exploring the sources of contractual incompleteness. This question is of interest to us in the investigation of portal alliances because we observe parties deciding

to use readily available (and low cost) information about the performance of their partnership in some of their formal contracts, but not in others.

Economic theory has taken an increasing interest in this question. The essential insight behind this literature stems from the work on security design by Aghion and Bolton [1992] and Dewatripont and Tirole [1994]. The former paper, for instance, finds that even in a setting where it is efficient to grant control to the entrepreneur, he may need to relinquish control to an investor in order to induce the financier to invest in the first place.

Dessein [2002] carefully explores these questions in the context of strategic alliances. He depicts a setting where, if no information problems were present, the firm making the critical technological contribution to the project would retain complete control over the project (*i.e.*, interference by the other party reduces the total surplus). But because the innovating firm has private information about its quality or the congruence of its incentives with the other firm, it will signal this to its partner by providing the other firm with some control rights. (This step is not too costly for a good firm, who knows that the information received by the other party is likely to be favorable, but costly for a bad firm.)

Two different types of information problems influence the allocation of control rights in this setting. The first relates to the use of contingencies based on observable performance measures, and depends on the precision of this measure. The greater the

level of noise contained in this performance measure, the more valuable a signal a single state-contingent control right becomes (*i.e.*, the difference in the cost of providing the control right for high and low quality firms becomes greater). Thus, in equilibrium, the greater the uncertainty surrounding the project, the more control will be transferred to the other firm. The second information problem is the degree to which there is asymmetric information about the degree of incentive conflict. The greater the information gap between the two parties relating to the structure of their objective functions, the more likely the parties are to use the transfer of control rights as a signal (again, because the signal is more valuable).

The reader may note (as does Dessein [2002]) that the some of the results of this model are quite different from those found in Aghion and Tirole [1997] or in Dessein [2001]. In the latter two models, relationships are more likely to be designed so that principals can use information to overrule agents when uncertainty or asymmetric information is lower. The key difference between these two views of the impact of uncertainty and asymmetric information on contract design is that only Dessein [2002] allows the agent to signal its preferences by offering control rights or contingent control rights. Allowing parties to signal, then, reverses some of the implications of the earlier works.

3. Portals and Portal Alliances

Portals—which can be defined as Internet sites that provide (directly or indirectly) a broad array of services and linkages to users—are a relatively new organizational form

and, like the Internet, have grown rapidly. The first portals began operations in 1994, shortly after the introduction of the World Wide Web and the widespread diffusion of the Internet browser. In May 2000, twenty publicly traded portals reached a combined market capitalization of over $250 billion. At that time, portals represented 13 of the top 15 U.S. web sites, with the leading U.S. portal receiving visits from 50 million unique users per month. Although the value of portals has declined dramatically, they continue to be among the most frequently visited sites on the Internet. Of the top 25 websites globally in 2001, more than half were portals. Competition between portals has been intense,[3] and the industry has been characterized by a number of horizontal and vertical mergers (generally with access providers), which have met with questionable success. While there has been significant mobility among second-tier portals top 4 positions in the industry have been occupied consistently by the same four players at least since 1999.

Many Internet portals, such as Yahoo!, originated as classified collections of links to other web sites. Others, such as Lycos, began as search engines, enabling users to locate web sites on certain topics or featuring specific phrases. While many portals were new entrants, others had previously operated proprietary on-line services (for instance, America Online). Although subscribers to these proprietary services initially had access only to the features developed for the service itself, these firms increasingly began providing Internet access and created portals of their own. Finally, producers of browser

[3]Gandal [2001] examines competition within the search engine segment of the portal industry and finds that while first mover advantages were important in attracting unique visitors, search engines competed on the quality of search services, which became an increasingly important determinant of traffic over time.

software (for example, Netscape) developed portals to take advantage of their products' placement on the desktop.

Beginning in 1997, portals began adding a broad array of materials to their sites. These included content, such as stock prices and news headlines, as well as services, such as on-line auctions and personal e-mail. The evolution of the services offered by portals is illustrated by Figure 1, which displays the evolution of Yahoo!'s homepage between 1994 and 1999. The basic services were typically available for free. Portals generated revenues principally through the sale of banner and sponsorship advertisements. Many portals also sought to diversify their revenue bases with transaction fees from merchandise sold on their sites by strategic partners and through other means; however, during this period, these strategies met with limited success.

Alliances, therefore, benefited a portal in two ways. First, in exchange for advertisements, promotions, and other services, the portal received direct compensation. Second, the agreements may have increased the appeal of the portal's site by deepening its content and extending its features.[4] These new features, which the portal had neither the time nor skills to develop itself, could attract new users and could also encourage more frequent or longer visits by existing users, thereby providing more opportunities to

[4]The appeal of a portal's web site can be measured in at least two different ways. The first is a measure called reach. This is the total number of unique visitors to a web site divided by the total number of all Internet users in a given period. The top Internet portal, Yahoo! was visited by more than half of all Internet users in July 2001. The second type of measurement is of how many pages that the average user examines on the site. Also, it should be noted that the product of these two measures (i.e., the unique audience multiplied by the number of pages viewed per person) is a good proxy for the number of advertising opportunities for the firm during the period in question.

display ads. In addition, during the years under study, analysts often considered measures of web site traffic such as the number of unique visitors per month and the average number of minutes per user per month in establishing recommended valuations for portals. Trueman, Wong, and Zhang [2000] find Internet firms' valuations responded to these measures of traffic.

Alliances were also useful for the partner firms, be they content, service, or technology providers. Many Internet sites struggled during this period to acquire a sufficient user base. In many segments of the Internet industry, analysts predicted that there would be a substantial shake-out, in which only one or two leading firms would survive and emerge as profitable. Portal alliances were one method of attracting users. Alliances also often permitted partners to rapidly test their business models and to acquire customer data. Even if they were executed on relatively unattractive terms, alliances could thus be beneficial for the partners as well.

The patterns of alliance formation provide some evidence that alliances were indeed thought to be critical to the strategies of many Internet portals and their alliance partners. Figure 2 illustrates the aggregate level of alliance formation during this phase of rapid growth. According to this figure, America Online / Netscape, Yahoo, Lycos, and Excite—the firms with the strongest positions in the industry—were the firms most involved in alliance formation. Microsoft, which was also a top 5 player in the industry, is absent from this analysis because it was not possible to distinguish between its software alliances and its Internet alliances.

4. Alliance Contracts

A. Description

The alliance agreements themselves were, in general, complex and varied considerably in their structure, even within the same industry category. Consider the following two examples:

In December 1998, Autoweb.com, which operated a site that allowed users to research new automobiles and to purchase them online, entered into a 13-month advertising and promotion agreement with Yahoo! Inc. The agreement specified the types and placements of Autoweb.com links on the Yahoo site, including banner and button placement, a link allowing users to search Autoweb's site, and links within Yahoo's auto classifieds service. Yahoo, for its part, would be solely responsible for the user interface and graphic display of Autoweb links. Limited exclusivity provisions were built into the agreement. The contract prohibited Autoweb from displaying any links to Yahoo's competitors on its front page. Yahoo, in turn, was prohibited from including graphic links to more than three other auto merchants, and was prohibited from displaying banner advertisements from any competitor on specified pages. Payment and performance provisions were also specified. The contract detailed the number of impressions[5] that Yahoo was to deliver (by type of advertisement); it granted Autoweb access to a database where these impressions would be calculated; and it described the contingencies that would result should Yahoo fail to deliver the required number of impressions during the term of the agreement. In addition, the contract loosely specified

[5]An impression is recorded each time each time an advertisement appears in a page viewed by a user.

some technical performance targets for Autoweb. As compensation, Yahoo received a fixed slotting fee and a referral fee for each click-through[6] under the agreement. This agreement did not involve the creation of a new site but rather focused on the links between two existing sites. Thus, the discussion of ownership was naturally limited; each party merely affirmed its ownership rights over the user data that it collected in the course of operations.

By contrast, an agreement signed between Lycos and Autobytel.com, then an Autoweb rival,[7] in February 1999 had a completely different structure. This agreement created a co-branded version of the Autobytel site for Lycos users. The co-branded site would have "the [A]utobytel 'look and feel' but with Lycos' logo displayed on the home page and each page related to new car buying." The creation of this new site required provisions about who would design, operate, serve, and pay for the site (Autobytel in all cases). The contract guaranteed Autobytel a minimum number of impressions, but also granted an unlimited number of links resulting from over 100 search terms, for which Lycos would provide exclusivity. (These search terms included misspellings such as "Alfa Romero" and colloquialisms such as "beemer.") Lycos was also prohibited from providing promotional links to any other on-line service involved in direct new-car sales. In return for these links, Autobytel paid a fixed fee and would pay an additional transaction-based royalty for each purchase request over a specified number submitted by

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[6]A click-through occurs when a user follows a displayed link to another site.

[7]Autobytel.com announced that it would merge with Autoweb in April, 2001.

Lycos' customers on the Autobytel site.[8] To ensure compliance, each firm was given audit rights to examine the others' records. Autobytel retained rights to all customer data, but agreed to provide aggregated customer profile data for Lycos.

As the examples above suggest, there was a great deal of heterogeneity in the alliances that portals entered into. In Elfenbein and Lerner [2003] we focus on the allocation of asset ownership and control rights. In this paper, we focus on exclusivity and the use of performance guarantees that grant one party or the other certain control rights in specific states of the world. Table 1 presents excerpts from selected contracts that relate to these two features of contract design. As Panel A illustrates, several different types of exclusivity obligations could be specified for either party. For example, provision 6.4 in the Yahoo-Autoweb contract, alluded to above, directly prohibits Autoweb from linking to a set of named competitors on any "initial page." Likewise, provision 7.1 of this contract prohibited Yahoo from entering into more than 3 total agreements with auto merchants. By contrast, section 3 of the contract between AOL and 1-800-Flowers.com identifies 1-800-Flowers as the exclusive provider of fresh-cut flowers for AOL customers, and the included section from the agreement between Lycos and Autobytel.com does not place any restrictions on Lycos regarding its *advertising* of other firms.

A number of different performance measurements were used in the alliance contracts. Panel B presents a number of examples relating to the technical execution of

[8]The number of impressions and the magnitude of the fees were redacted from the publicly filed versions of both contracts.

portal alliances. Both the Yahoo-Autoweb, and AOL-1-800-Flowers.com contract specify performance requirements such as speed and availability (or uptime) for the partners' website. The AOL-1-800-Flowers.com contract also specifies certain customer service requirements for the partner firm. Finally, the Yahoo - American Greetings contract specifies that American Greetings remain among the top websites in its category as determined by and independent third party. Each of these contingencies would grant the portal certain rights, such as termination or renegotiation, if they were not met. A number of other contingencies relating to the commercial performance of the agreement granted the partner rights if they were not met. These contingencies are discussed in section 5.

B. Mapping Between Theory and Analysis

The theoretical analysis above motivates us to examine the prevalence and determinants of the exclusivity of these portal alliances and their use of contingencies. Nonetheless, the mapping between theory and analysis is not seamless. This section describes how we think about these issues.

The literature on technology contracting suggest the following highly stylized empirical approach to analyzing exclusivity:

$$E_i = \alpha + \beta I_i + \gamma R_i + \delta X_i + \varepsilon_i \qquad (1)$$

where E_i is a measure of exclusivity for contract i, I is a measure of the importance of the invention, R is the payment structure of the contract (*i.e.*, whether or not a royalty is used), X represents other observable characteristics of the technology and the contracting

parties, and ε_i is the idiosyncratic error. Following the Kamien and Tauman [1986] and Gallini and Wright [1990], we predict that $\beta > 0$.

This analyses poses two complications, which should be acknowledged up-front. First, the use of royalties is of course not exogenously determined. Rather, *R* is also a choice variable, a complication we will need to address below. Second, as we will discuss in detail below, these agreements have two-sided exclusivity provisions, rather than the one-sided one depicted in the theory. Because both the portal and the partner make valuable contributions to the alliance's success, the contracts frequently limit both parties' abilities with work with others. We will examine both sets of provisions in the analysis.

Regarding the use of contingencies in alliance contracts, Dessein [2002] leads us to expect that the parties will increasingly acquiesce to making their continuation of the alliance dependent on observable measures, the higher the level of uncertainty in the environment at the time that the contract is signed. (As we will see in Table 2, the effort of the partner is typically critical in these alliances.[9]) In Dessein's [2002] treatment, it is worth noting, only the entrepreneur is interested in private benefits (*i.e.*, those that do not correlate perfectly with the surplus generated by the alliance). As a result, the suggestion of this model is that it is only important to analyze the control rights or contingencies that

[9]Because they do not correspond as closely to the theoretical depiction, we repeat the analyses, deleting those observations where the bulk of the effort contribution is from the portal. The results are little changed, although in some regressions the coefficient of interest loses significance.

the partner grants the portal as part of its signaling strategy. As we discuss in Elfenbein and Lerner [2003], however, both parties may have objective functions that do not correlate perfectly with surplus generated by the alliance. Partners have multiple objectives in signing alliance contracts, including testing unproven business models, increasing the amount of traffic on their own websites, and using the external agreement as certification in order to obtain additional financing. Furthermore, the fact that partners additionally operate their own (non-alliance) websites may lead to an even further divergence in the objectives of the contracting parties. Portals, for their part, are likely to have many alliance partners and may be forced to trade off one partner for another in their use of proprietary customer information. Thus, we examine empirically the use of provisions that grant state-contingent control to either party.

We test this hypothesis empirically by estimating the following equation:

$$C_i = \alpha + \beta M_i + \delta X_i + \varepsilon_i \qquad (2)$$

where C_i is a measure of the extent to which contract i employs contingencies, M_i is a measure of the maturity of the industry (or industry segment) at the time the agreement was signed, X_i are other observable characteristics of the contract i and its contracting parties, and ε_i is the idiosyncratic error. We expect that β will be less than zero.

A second prediction of the Dessein model is that the degree of asymmetric information about preferences should also be positively related to the allocation of contingencies. While we cannot observe information gaps directly, we are able to see one way in which the parties respond to potential incentive conflicts: namely, the level of

exclusivity provisions built into the contracts. Thus, in a second analysis we expand the model as follows:

$$C_i = \alpha + \beta M_i + \gamma E_i + \delta X_i + \varepsilon_i \quad (3)$$

where C_i, M_i, E_i, X_i, and ε_i are the variables described above. If exclusivity *actually reduces* the incentive conflict between the two parties, then we would expect γ to be less than zero. If, however, the exclusivity provisions in these contracts are *incomplete responses to (unobservable) information asymmetries about preferences*, then we would expect γ to be greater than zero.

5. The Data Set

To undertake the analysis, we identified a set of 106 contracts between portals and other firms entered into between 1995 and 1999. These contracts were identified primarily from Recap/IT, a consulting firm that maintains a database of contracts involving Internet, technology, and telecommunications firms. Publicly traded Internet firms, like other concerns, are required by the U.S. Securities and Exchange Commission (SEC) to file material documents. Internet companies tend to interpret this requirement conservatively, and often file alliance contracts. Recap/IT identifies alliances from press releases, analyst reports, and reviews of SEC filings. Their database includes links to the filings of these firms detailing each agreement.

Because all contracts in the database (and the analysis) had been deemed "material" and filed with the SEC, a natural question is what type of selection biases are at work. Typically, alliances are considered "material" for firms with limited revenues or

assets: a definition of materiality is that "there is a substantial likelihood that a reasonable shareholder would consider it important in making an investment decision." Since we can observe agreements filed by either party, the only subset of agreements that we cannot observe are those between two established firms. For example, analyst reports suggest that America Online and Yahoo! signed alliances with several large retail banks in 1998 and 1999. These agreements were not filed with the SEC by either party, and are thus not included in our sample. It is not clear *ex ante* what bias will be introduced by our sampling technique.

For our analysis, we selected a random sample of 106 alliances from this database. We sought to create a population that avoided undesirable heterogeneity. In particular, we eliminated alliances where:

- One of the parties was non-profit organization.
- One of the parties had a controlling interest in the other, either through a majority equity stake or through a purchase option.
- The two parties had a previous alliance covering the same set of technologies, and consequently were renegotiating the terms of an earlier alliance.

We reviewed these documents carefully to identify the key features of these agreements. After considerable experimentation, we developed a coding form that captured the key features of these alliances. In many cases, firms filed multiple copies of the same documents with the SEC. In these cases, different versions of the documents

were reviewed to insure that information that was redacted in one version was not included in another.

We also gathered two types of supplemental information. First, to assess the financial health of the contracting parties, we examined the Compustat and Worldscope databases for the end of the fiscal quarter immediately prior to the alliance. For firms where this information was not available from Compustat or Worldscope, we gathered the information from 10-K filings, IPO prospectuses, and other securities filings.

Second, we employed information from an Internet and on-line usage tracking service, Media Metrix (formerly known as PC Meter), which has compiled information from the earliest days of the industry.[10] For each of the two contracting parties, we assessed their Internet properties' "reach"—the percentage of all U.S. users who accessed the site at least once in a given month—and the total number of days and minutes that the average accessing user viewed the site in that month. In making these calculations, we compiled all properties owned by the contracting firm: for instance, the usage data for an alliance signed by Disney in 1999 would include information about visits to ABC.com.

Table 2 summarizes the sample of agreements used in this analysis. Panel A summarizes the relative effort required in the alliance. We examined five activities that

[10]Media Metrix determined usage by examining the activity of a representative panel of Internet users. The size of the panel and accuracy of the measures has increased over time. We used data on U.S. users only: while in recent years, Media Metrix has introduced statistics on non-U.S. Internet usage, these were not available for the entire period. During the period under study, U.S. users had a dominant presence at most commercial Internet sites.

frequently were required after the agreement was signed: the development of material for the site (whether content, services, or technology), the maintenance and hosting of the site, the provision of customer service, order fulfillment, and billing. We coded these as +1 if the portal was required to make the greater effort on this dimension, –1 if the partner was required to do so, and 0 if the effort was jointly shared or not required by the agreement. While the sum of these five effort measures ranged from +5 to –5, in most cases, the bulk of the post-agreement effort was required of the partner.

Panel B presents the traffic on Internet sites of the two parties in the month before the signing of the agreement. Not surprisingly, portals' sites were visited by more users, more frequently, and for longer than partners' sites. In the ensuing analysis, we use the relative site visitation data as our proxy for the value of the partner's technology. Our assumption is that the higher the traffic on the partner's web site (relative to that of the portal), the more valuable is the partner's technology.

Panel C considers the relative financial health of the two parties. There was a great deal of variation, which reflected the fact that we examined the financial health of the entire corporate entity if it had 100% ownership of the contracting firm. For instance, in a transaction involving Snap.com, the financial information of its parent, General Electric, was recorded.

Panel D provides information about the level of industry development at the time at which the contract was signed. In the sample of 106 alliance contracts, 67 different

partner firms were represented. Of these, 63 firms fell into 26 distinct segments of the Internet industry and four were categorized as "traditional" firms. These industry segments, the public firms that composed them, and the date of these firms' IPOs are provided in Table A1 in the Appendix. The "traditional" category was assumed to begin at the same time as the earliest IPO among all firms in Table A1, December 15, 1994.[11] As Panel D shows, more than half of the contracts in our sample were signed before the first IPO in the industry segment of the partner. Contracts were signed up to 2 years before this watershed date and up to 4.5 years after the date. We interpret the difference (in days) between the contract date and the date of the first IPO in the partner category as the maturity of the industry segment at the time of contracting.

6. Analysis

We divide the analysis into two parts. In the first part we analyze the determinants of exclusivity in portal alliances. In the second we examine the use of certain specific performance information in structuring alliance contracts.

A. Exclusivity in Portal Alliances

Table 3 presents summary statistics about the payment structure and exclusivity of portal alliances. As Panel A indicates, the majority of contracts involved some form of shared revenue. Royalties, where present, were frequently based on product sales, less frequently based on acquiring new customers, and occasionally on gross margins. Firms

[11]We also delete these four "traditional" firms in the diagnostic regressions. The results are largely unchanged, although the coefficient of interest loses statistical significance in three cases.

frequently shared revenues stemming from advertising on the alliance site, typically when those alliance agreements were focused on using partner content.

Panel B and Panel C focus on exclusivity obligations restricting the actions of portals and partners, respectively. For both the portals and the partners, we examined seven different types of exclusivity obligations, which are listed in the left hand column of the table.[12] In both cases, these seven exclusivity obligations were divided into two categories, those that related to establishing other alliances with competitors and those that related to restrictions on advertising competitors. Some of the restrictions clearly subsumed others. For example, restricting a party from advertising a competitor anywhere on the co-party's site clearly prohibited them from advertising a competitor on a particular section of the co-party's site. Therefore, in generating composite measures of the exclusivity of the agreements, some terms were given larger weights than others. These weights are listed in the second column to the left. The results that follow are robust to several other weighting schemes, including the simple scheme in which each provision is given equal weight.

[12]For portals we examined whether the portal was restricted from entering into any or more than a set number of agreements with competitors; from advertising competitors anywhere on the site, in specific areas of the site, or on a continuous basis; from establishing any links to competitors' sites; and from granting the use of certain keywords or search terms to other firms. We similarly analyzed whether the partner was restricted from entering into any agreement with a competitor or agreements with competitors involving specific content; from advertising competitors anywhere on its site, in specific areas, or on a continuous basis; from promoting competitors more prominently than the portal; or from establishing any links to competitors' sites. In all cases, +1 denoted a case where this exclusivity provision was present and 0 where it was absent.

As Panel B shows, 40.5 percent of the alliance agreements restricted the portals from signing an alliance with any of the partner's competitors, and 8.5 percent of the agreements restricted the total number of alliances that portals could sign with partners in a given category. Roughly one-quarter of the time, portals assigned keywords uniquely to the partner firm. Overall, the portal's ability to sign agreements with the partner's competitors was at least somewhat restricted in 61.3 percent of the contracts. Restrictions on portals' advertising behavior were present somewhat less frequently. At least some restriction on the portal's ability to advertise competitors was present in 46.2 percent of the contracts.

Panel C examines the exclusivity obligations for partners. Generally, agreements contained fewer exclusivity obligations for partners than for the portals. In 15 percent of the cases, partners were prohibited from signing (any or particular) alliances with the portal's competitors. Restriction on the partners' advertising was somewhat more frequent. In 32.1 percent of alliance contracts, there was at least one of this type of restriction.

We next studied how the exclusivity of the alliances varied with the circumstances of the contracting parties. To perform the analyses presented in Tables 4 and 5, we divided the observations by four measures: the date of the agreement, the relative effort required of the two parties, the relative traffic on the two parties' Internet

sites (as measured through the sites' reach), and the relative financial strength of the contracting parties (as measured through revenues in the previous four quarters).[13,14]

The first two measures were divided roughly into thirds: we placed approximately the same number of observations in each of the three time and effort categories. It did not, however, make as much sense to divide the traffic and financial measures in this way. For instance, it was unclear whether a distinction between a portal that was visited five times more often than the partner and one that was visited ten times more often was very meaningful. Thus, we divided the observations into those where the portal was visited at least three times more often or had three times greater revenues than the partner, those where this held for the partner, and intermediate cases. As a result, the number of observations in these cells was not even. In particular, there were relatively few cases where the partner had significantly greater reach than the portal.[15]

Few distinct patterns emerged from the univariate analysis of the restrictions on portals presented in Table 4. There were significantly more restrictions on the partners, however, when there was an asymmetry in relative site popularity between the two parties. Partners faced very few restrictions when site popularity was relatively similar.

[13]These independent variables are also used in Table 8.

[14]In choosing the measures for the cross-tabulations, we opted for the most readily available measures. In the regression analyses, we examined the robustness of the results to the use of alternative measures.

[15]In the cases where site visitation (or revenue) data were missing, we assumed that the other party had greater reach (or revenues). We corroborated this assumption by examining the reported site visits (or revenues) once the partner began to be reported by Media Metrix (or revealed its financial position in later SEC filings).

In the literature review above, we noted predictions that in cases when licensors had more important (or radical) technologies, they would be better off licensing them on an exclusive basis. Greater exclusivity when the partner's technology is more frequently accessed appeared broadly consistent with these predictions but could be sensitive to one or two observations in the cross-tabulations. On the other hand, relative bargaining power also seemed to have an impact on partner restrictions. Like the control provisions discussed in Elfenbein and Lerner [2003], more restrictions were placed on the partner when the relative reach of the portal increased. This, too, suggests that in this sample bargaining power may overwhelm efficiency concerns in circumstances like those described by Aghion and Tirole [1994].[16]

In the regression analysis[17] reported in Table 5, the simultaneous influence of multiple factors on the composite measures of exclusivity was examined. In a specification including controls for deal type and portal, greater relative reach for the

[16]It may be pointed that the reported analysis was of relative rather than absolute importance of the licensed item. The predictions of Kamien and Tauman [1986] and Gallini and Wright [1990] focus on absolute importance, whereas Aghion and Tirole [1994] focus on relative bargaining power. When the cross-tabulation analysis was repeated grouping alliances instead by the reach of the partner (rather than the relative reach), the differences in partner restrictions were no longer significant. One explanation is that efficiency is more likely to be a prime consideration when the relative bargaining power is even or in favor of the partner.

[17]One potential problem that the analysis faced was non-independence of the observations. In particular, a number of portals appeared frequently in the sample. While the alliance agreements of the portals were certainly not identical, we suspected that there might have been common elements across the agreements of each portal. In the regression analyses, we addressed this concern by calculating heteroskedastic-corrected standard errors (grouped by each major portal). We also included dummy variables in many regressions for each of the seven portals most frequently represented in the sample (America Online, Excite, iVillage, Lycos, Microsoft Network, Netscape, and Yahoo!) to control for the presence of portal-specific effects.

portal was associated with greater portal restrictions. This finding was without corroboration in the univariate analysis or in the more basic specification, so it is difficult to interpret.

A more distinct pattern emerged in the analysis of the composite measure of partner exclusivity obligations. Although relative reach did not have an impact on partner exclusivity in the basic specification when treated as a monotonic variable, greater reach on the part of the partner was associated with greater restrictions on the partner when controls for deal type and portal were added. Furthermore, when relative reach was allowed to vary non-monotonically an even better fit was achieved. Excess reach on the part of the partner and excess reach on the part of the portal were both associated with greater partner exclusivity (and were both economically and statistically significant), consistent with dual explanation offered above. These results remained robust when controls for deal type and portal were added in unreported regressions. They were also robust to a simultaneous equations specification in which the type of payment (*i.e.*, royalties vs. fixed fees) and the level of exclusivity were modeled and these terms were allowed to interact.[18] The results of exclusivity equation only are presented in the rightmost column of Table 5.

B. Contractual Contingencies

We examined the use of two types of contingent control rights that could be included in alliance contracts. The first set of terms related to technical performance and

[18]The theoretical motivation for this approach is that the literature typically models the choice of payment structure and exclusivity as non-independent and simultaneous.

could be granted to the portal. These terms included the speed with which the partner's pages loaded, the percentage of time the web-site was available, the level of customer service, and the competitive ranking by specified third parties (e.g., a trade magazine) of the site relative to its peers. The second set of terms related to the minimum level of commercial activity that the site, content, or service covered by the agreement needed to reach and could be granted to the partner. Targets included a minimum number of user impressions that the site would garner (whether all impressions or those of some targeted subset of users), "click-throughs" into another area, revenues, or new customers. In case these levels were not reached, the agreement was typically terminated or renegotiated. These variables were recorded as +1 if the provision was present and 0 otherwise.

Table 6 summarizes the incidence of each of these performance measures in the alliance contracts. Panel A examines the use of technical contingencies in the contract, and Panel B examines the use of market-related contingencies. The median agreement contracted on no technical contingencies and one market-related contingency. In both cases, the average contract contained less than one of each type of contingency.

One potential problem with analyzing state-contingent control rights is that not all of these rights are equal. Some contingencies may cover more states of nature than others, and these provisions vary in strength. Thus, the probability-weighted likelihood that an actual transfer of control occurs will vary with the type of control right and the individual contract. While we have no empirical strategy to deal with the second of these issues, we can address with the first concern—that some control rights cover more states

of nature than others—by examining the contingencies separately using a seemingly unrelated regression (SUR) approach. To complement each of the regression analyses reported below, we undertake unreported additional analyses using a non-linear (logit) SUR to examine the allocation of individual contingencies. In all cases, the coefficients of the variables of interest estimated using the SUR procedure were of similar sign and significance level as those estimated using the composite measures.

Uncertainty and the use of contingencies

To avoid problems of interpretation, we first look only at the influence of uncertainty on the allocation of contingencies between contracting parties. Table 7 examines the correlation between the maturity of the partner's industry segment, the date of the agreement, and the nine contingencies described above. Neither the composite technical contingencies measure nor the market contingencies measure is correlated with the date of the agreement. Both measures are significantly *negatively* correlated, however, with the maturity of the partner's industry. This finding is consistent with literature on information and control in alliances.

Table 7 also shows a high level of correlation among the incidence of individual technical performance measures. This suggests that technological considerations may be responsible for some of the observed patterns in the use of these performance measurements. To account for this possibility, we examine the impact of industry maturity on the sum of the contingencies using an ordered logit regression in Table 8. The impact of industry maturity on the incidence of technical contingencies is negative

and significant at the $p < .01$ level when dummy variables for deal type are included.[19] Adding other characteristics of the contracting parties and the agreements to the regression reduces the magnitude of the industry maturity coefficient, but it remains significant at the $p < .05$ level. Finally, adding dummy variables for the portals in the agreements changes the sign of the coefficient from negative to positive and wipes out its significance. It is not clear, however, that adding dummy variables for portals has any particular justification in this context.

Regressions of the incidence of market contingencies display a similar, if not quite identical, pattern. In these regressions, industry maturity is also negatively and significantly correlated with the use of the performance measures. Including more controls also reduces the significance of industry maturity.

The results of both the correlation and regression analyses of technical contingencies are consistent with model proposed by Dessein [2002]. When uncertainty is greater, portals are granted significantly more contingent control rights. Market-related contingent control rights granted to partners display a similar empirical pattern: the greater the uncertainty in the environment, the more likely the contract is to grant market contingencies to the partner. The latter result, however, cannot be construed as a direct test of Dessein's [2002] model and may reflect the presence of bilateral information asymmetries about the structure of parties' preferences for private benefits.

[19]The influence of industry maturity on the use of technical contingencies is economically meaningful as well. At the median maturity and the mean of the remaining independent variables, decreasing the industry maturity by one standard deviation increases the number of technical contingencies from 0 to 1.

Incentive conflict and the use of contingencies

Finally, we look at how the use of contingencies reflects potential differences in the level of incentive conflicts between the contracting parties. In Table 9, we investigate the relationship between the use of exclusivity provisions in the alliance contracts and the use of contingencies. For the purpose of this analysis, we assume that exclusivity is exogenous.[20]

Two empirical findings emerge from this analysis:

- First, there is a positive link between exclusivity restrictions on the *partner* and the use of *technical contingencies*.
- Second, there is an even more robust statistical link between exclusivity restrictions on the *portal* and the use of *market contingencies*.

The results are strongly consistent with the view that exclusivity provisions are imperfect responses to unobserved incentive conflicts. Exclusivity provisions are more frequently included when incentive conflict is presumed to be higher, coinciding with the use of contingencies in the contracts. These results are not consistent with the alternative hypothesis that exclusivity restrictions succeed in reducing incentive conflicts between the firms and thus reduce the need for contractual contingencies.

[20]This is equivalent to assuming that exclusivity negotiations are performed first, and that exclusivity provisions do not change once agreed upon.

7. Conclusions

A detailed examination of the structure of portal alliance contracts has allowed us to test a rich set of theories about the design of two-party agreements. In this paper, we have sought to understand the use of exclusivity provisions and the determinants of the use of contingencies of the agreements, two questions that have been theoretically scrutinized but have attracted little empirical attention.

We find that patterns of exclusivity in portal alliances lend support for the predictions technology licensing literature—especially Kamien and Tauman [1986] and Gallini and Wright [1990]—that more important technologies are more likely to be licensed exclusively. But in our sample of contracts, portals with more relative bargaining power are also able to saddle partners with more exclusivity obligations, behavior that has not been scrutinized by theorists.

Parties include more performance measures in contracts when environmental uncertainty is greater: as industries mature, these provisions tend to be dropped. Parties also include more state-contingence control rights in contracts when more exclusivity restrictions are present in the contract. We interpret these results as supporting "control theory" models such as Dessein [2002].

We end with a firm conviction that considerable opportunities exist for further empirical research into these issues. Of particular interest is the question of

understanding the extent to which the patterns seen here generalize across industries. (Anand and Khanna [2000] represent one pioneering attempt to look at strategic alliances on a cross-industry basis.) The Internet industry during this period was one of enormous uncertainty and the contracts we analyze here were in many cases signed by inexperienced participants with little experience. Understanding the extent to which similar results are seen in other industry—and attempting to understand the determinants of any differences—would be a rewarding area for future work.

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Figure 1

The evolution of Yahoo!'s homepage. The upper left page is from 1994; the upper right from 1995; the bottom left from 1997; and the bottom right from 1999. The source is Girotto and Rivkin [1999]. Copyright © 1999 by the President and Fellows of Harvard University. Reprinted with permission.

Figure 2

Alliances by major portal, 1995-2000. Alliance data provided by come from Recap/IT. Microsoft's alliances are not included because it was not possible to distinguish between Microsoft's (many) software alliances and Microsoft's Internet alliances.

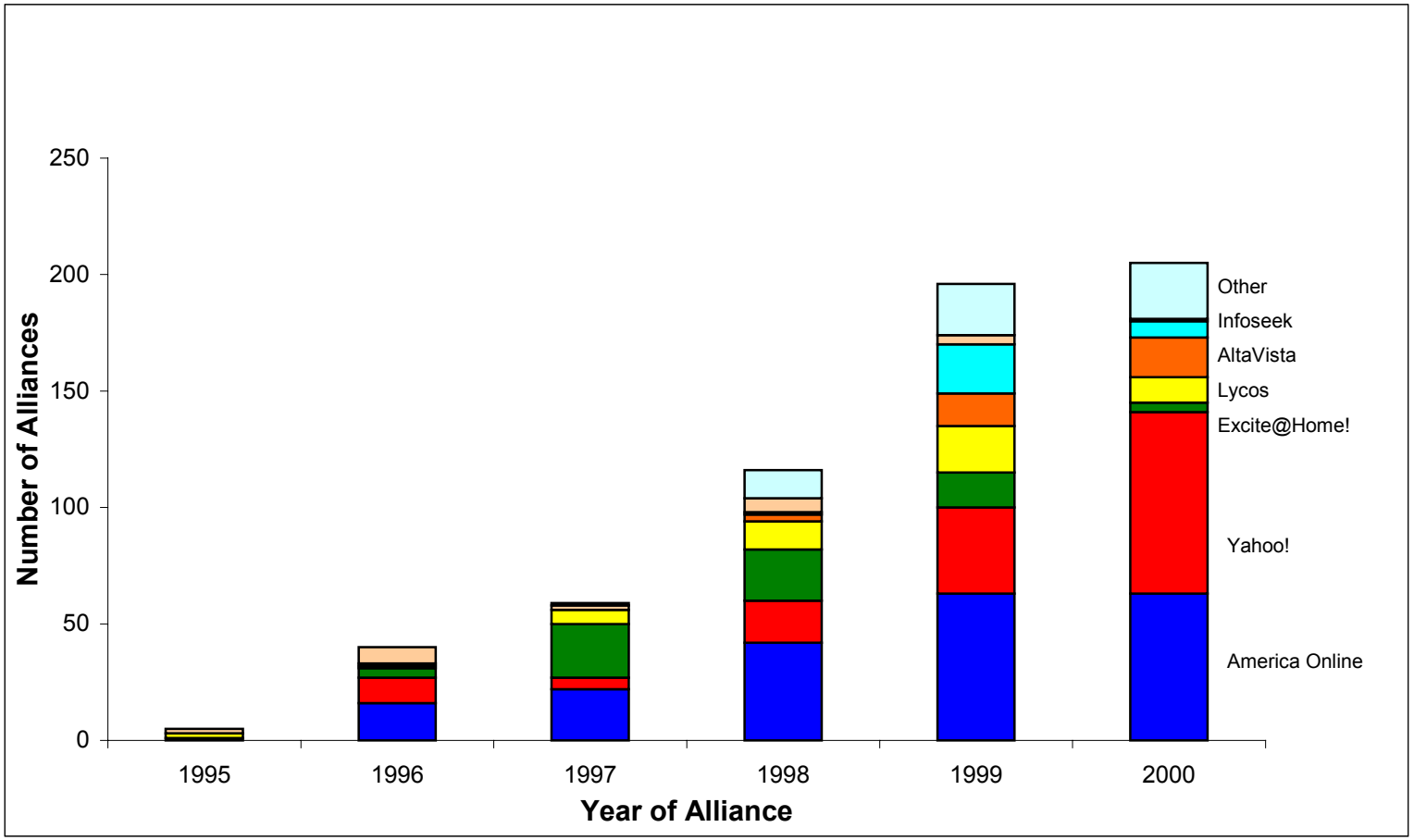

Table 1

Examples of exclusivity provisions and contingencies in portal alliance contracts. The table below contains excerpts from selected contracts.

Panel A. Exclusivity

Source Contract		*Text*
Yahoo-Autoweb	6.4	In no event shall any initial Page on the Autoweb Site to which users Click-through from any Autoweb Button provided pursuant to the Auto Merchant Program, contain graphic or textual hyperlinks, banner advertisements or promotions of any of the following Yahoo competitors: Amazon, eBay, Excite, Lycos, Microsoft, America Online, Netscape, CNET and Infoseek, and their successors.
Yahoo-Autoweb	7.1	Yahoo shall not include graphic links (merchant buttons) to more than three (3) Auto Merchants on the Included Pages. In addition, Yahoo shall not display any banner advertisements on the Included Pages for any Autoweb Competitor; provided, however, that notwithstanding the foregoing, Auto Merchant Program Participants shall not be precluded from purchasing banner advertising on the Included Pages Autoweb.
	7.2	Yahoo will provide written notice to Autoweb in the event that Yahoo intends to create, acquire, develop or otherwise make available a promotional opportunity relating to Auto Products similar in scope and nature to the program described in this Agreement on a Yahoo navigational web site that is directed to an audience within the United States and is not the subject of this Agreement (provided that such navigational web site is solely owned, created, and branded by Yahoo).
Lycos-Autobytel.com		[T]he terms of the [contract] shall not prevent Lycos from displaying banners, advertisements or hyperlinks to new car manufacturers, provided however, that any such banners, advertisements or hyperlinks shall not promote, display or feature any on-line service for the purposes of selling new vehicles directly to consumers or distributing referrals for the purchase of new vehicles.
AOL-1800 Flowers		3.AOL EXCLUSIVITY OBLIGATIONS. 1-800-Flowers will be the exclusive provider of fresh-cut flowers and Gift Plants on AOL.com (the "AOL.com Exclusive Products"), as follows: AOL will not (i) promote, market or advertise within AOL.com any entity (other than 1-800-Flowers) that provides "AOL.com Exclusive Products," including but not limited to any entity listed on Exhibit C (each entity so listed, "1-800-Flowers Competitor") and (ii) will not allow any provider of the AOL.com Exclusive Products, including but not limited to any 1-800-Flowers Competitor, to sell, or offer to sell the AOL.com Exclusive Products within AOL.com

Panel B. Contingencies

Source Contract	*Text*
Yahoo-Autoweb	6.5 The Autoweb Site shall comply with the scale, speed and performance requirements mutually agreed upon by the parties but in no event less than that provided by the Yahoo Main Site.
AOL-1800 Flowers	3. SPEED; ACCESSIBILITY. 1-800-Flowers will ensure that the performance and availability of the Affiliated 1-800-Flowers Site (a) is monitored on a continuous, 24/7 basis and (b) remains competitive in all material respects with the performance and availability of other similar sites based on similar form technology. 1-800-Flowers will use commercially reasonable to ensure that: (a) the functionality and features within the Affiliated 1-800-Flowers Site are optimized for the client software then in use by AOL Users; and (b) the Affiliated 1-800-Flowers Site is designed and populated in a manner that minimizes delays when AOL Users attempt to access such site.
AOL-1800 Flowers	5. SERVICE LEVEL RESPONSE. 1-800-Flowers agrees to use commercially reasonable efforts to provide the following service levels in response to problems with or improvements to the Affiliated 1-800-Flowers Site: • For material functions of software that are or have become substantially inoperable, 1-800-Flowers will provide a bug fix or workaround within two (2) business days after the first report of such error. • For functions of the software that are impaired or otherwise fail to operate in accordance with agreed upon specifications, 1-800-Flowers will provide a bug fix or workaround within three (3) business days after the first report of such error. • For errors disabling only certain non-essential functions, 1-800-Flowers will provide a bug fix or workaround within sixty (60) days after the first report of such error. •
Yahoo - American Greetings	3.2 (c) American Greetings shall operate and maintain the American Greetings Site to be one of the top [ ][a] sites for the on-line provision of Greetings (as determined, to the extent practical, over a reasonable period of time, by an independent, qualified and industry-recognized third party based on the quantity and quality of customers and product offerings).

[a]The actual number was redacted from the contract disclosed to investors.

Table 2

Summary statistics. The sample consists of 106 alliances involving Internet portals between 1995 and 1999. Observations are summarized by the date of the agreement, the effort required of the portal and partner (cases where the portal is expected to make the greatest effort are coded as +1, those where the partner is as -1, and those where the effort is shared or not applicable are coded as 0), the traffic on the portal and the partner's Internet properties in the month before the signing of the contract, and the financial position of the portal and the partner in the quarter before the signing of the contract (in millions of dollars).

Panel A: Effort Required by Two Parties					
	Mean	*Median*	*Stan. Dev.*	*Minimum*	*Maximum*
Site development	-0.65	-1	0.66	-1	1
Maintenance and hosting	-0.58	-1	0.69	-1	1
Customer service	-0.56	-1	0.54	-1	1
Order fulfillment	-0.50	-1	0.56	-1	1
Billing	-0.46	-1	0.59	-1	1
Sum of five effort measures	-2.75	-3	2.30	-5	5
Panel B: Traffic on Internet Properties of Portal and Partner					
	Mean	*Median*	*Stan. Dev.*	*Minimum*	*Maximum*
reach of portal	29.5%	31.2%	19.8%	0.8%	67.1%
reach of partner	4.9%	1.5%	10.2%	0.2%	55.3%
Days per viewer-month for portal	3.30	3.21	1.36	1.10	6.50
Days per viewer-month for partner	1.67	1.46	0.68	1.00	4.50
Minutes per viewer-month for portal	19.34	14.10	15.67	4.20	73.90
Minutes per viewer-month for partner	8.87	7.30	6.43	1.40	36.70
Panel C: Financial Position of Portal and Partner					
	Mean	*Median*	*Stan. Dev.*	*Minimum*	*Maximum*
Sales of portal	953	30	2873	0	23978
Sales of partner	759	4	4276	0	37903
Net income of portal	134	–1	437	–104	2284
Net income of partner	39	–3	257	–433	1986
Cash of portal	1606	174	4271	0	21761
Cash of partner	720	17	3327	0	24956
Shareholders' equity of portal	2646	306	6621	–1	37165
Shareholders' equity of partner	1161	16	4346	–8	24067
Panel D: Industry Development					
	Mean	*Median*	*Stan. Dev.*	*Minimum*	*Maximum*
First IPO in Category[a]	12/02/97	04/18/98	565 days	12/15/94	12/16/99
Contract Date – First IPO in Category	149	–17	502	–720	1497

[a]First IPO in Category is the first IPO in the industry subcategory of the partner firm.

Table 3

The payment structure and exclusivity of portal alliances. The sample consists of 106 alliances involving Internet portals between 1995 and 1999. Observations are summarized by the date of the agreement; and the presence (coded as +1) or absence (coded as 0) of contract terms relating to exclusivity obligations on the portal and the partner firm.

Panel A: Payment Structure of Portal Alliances

	Fixed Payment Only	*Royalty: Product Sales*	*Royalty: Gross Margin*	*Royalty: New Customers*	*Shared Ad Revenue*
Fraction	33.9%	29.2%	1.9%	9.4%	27.7%

Panel B: Portal Exclusivity Obligations

	Weight	*Mean*	*Median*	*St. Dev.*	*Min*	*Max*
Relating to Other Agreements:						
Portal cannot establish any agreements with competitors	2	.405	0	.493	0	1
Portal cannot establish more than N agreements with competitors	1	.085	0	.280	0	1
Portal cannot grant the use of certain keywords to competitors	1	.264	0	.442	0	1
Total Portal Agmt. Restrictions	n.m.	.386	.333	.359	0	1
Relating to Advertising:						
Portal cannot advertise partner competitors	2	.160	0	.368	0	1
Portal cannot advertise partner competitors in certain areas	1	.264	0	.443	0	1
Portal cannot advertise partner competitors on a continuous basis	1	.038	0	.191	0	1
Portal cannot link to partner competitors	2	.132	0	.340	0	1
Total Portal Ad. Restrictions	n.m.	.221	0	.331	0	1
Total Portal Exclusivity[a]	n.m.	.608	.458	.564	0	2

Panel C: Partner Exclusivity Obligations

	Weight	*Mean*	*Median*	*St. Dev.*	*Min*	*Max*
Relating to Other Agreements:						
Partner cannot establish any agreements with competitors	2	.075	0	.265	0	1
Partner cannot establish certain agreements with competitors	1	.075	0	.265	0	1
Total Partner Agmt. Restrictions	n.m.	.126	0	.230	0	1
Relating to Advertising:						
Partner cannot advertise portal competitors	2	.113	0	.318	0	1
Partner cannot advertise portal competitors in certain areas	1	.085	0	.280	0	1
Partner cannot advertise portal competitors on a continuous basis	1	.019	0	.137	0	1
Partner cannot link to portal competitors	2	.094	0	.294	0	1
Partner must promote portal at least as Prominently as competitors	1	.113	0	.318	0	1
Total Partner Ad. Restrictions	n.m.	.126	0	.229	0	1
Total Partner Exclusivity[b]	n.m.	.234	0	.387	0	2

[a,b]Normalized by the maximum in each category. The maximum possible value of this measure is 2.
n.m. = Not meaningful.

Table 4

Exclusivity and contract characteristics. The sample consists of 106 alliances involving Internet portals between 1995 and 1999. Observations are divided by the date of the agreement, the relative effort required of the portal and partner, the relative reach of the portal and the partner in the month before the signing of the contract, and the relative sales of the portal and the partner in the quarter before the signing of the contract. The table presents several measures of exclusivity. Panel A through G report whether the portal is restricted from entering into any or more than a set number of agreements with competitors; from advertising competitors anywhere on the site, in specific areas, or on a continuous basis; from establishing any links to competitors' sites; and from granting the use of certain keywords to other firms, as well as the sum of these measures. Panels H through N report whether the partner is restricted from entering into any agreement with any competitor or agreements with competitors involving specific content; from advertising competitors anywhere on the site, in specific areas, or on a continuous basis; from promoting competitors in a more prominent manner; or from establishing any links to competitors' sites, as well as the sum of these measures. (+1 denoted a case where this exclusivity provision was present and 0 where it was absent.) The rightmost column presents test statistics from χ^2-tests of the significance of these differences.

Panel A: Portal Cannot Establish Any Agreements with Competitors

	Average Exclusivity for Alliances When…			*Test*
	False	*Intermediate*	*True*	*Statistic*
Is this a late agreement?	0.47	0.39	0.35	1.02
Is most effort required of portal?	0.49	0.30	0.45	3.27
Does portal have greater reach?	0.33	0.39	0.41	0.10
Does portal have greater revenues?	0.71	0.50	0.32	***11.13

Panel B: Portal Cannot Establish More than Set Number of Agreements with Competitors

	Average Exclusivity for Alliances When…			*Test*
	False	*Intermediate*	*True*	*Statistic*
Is this a late agreement?	0.56	0.46	0.46	0.93
Is most effort required of portal?	0.54	0.42	0.55	1.50
Does portal have greater reach?	0.33	0.61	0.47	1.47
Does portal have greater revenues?	0.71	0.50	0.43	*5.35

Panel C: Portal Cannot Advertise Competitors

	Average Exclusivity for Alliances When…			*Test*
	False	*Intermediate*	*True*	*Statistic*
Is this a late agreement?	0.15	0.15	0.19	0.26
Is most effort required of portal?	0.24	0.07	0.18	*4.82
Does portal have greater reach?	0.33	0.06	0.18	2.30
Does portal have greater revenues?	0.14	0.00	0.18	1.36

Panel D: Portal Cannot Advertise Competitors in Certain Areas

	Average Exclusivity for Alliances When…			*Test*
	False	*Intermediate*	*True*	*Statistic*
Is this a late agreement?	0.41	0.41	0.46	0.19
Is most effort required of portal?	0.61	0.28	0.36	***9.82
Does portal have greater reach?	0.33	0.33	0.45	0.89
Does portal have greater revenues?	0.38	0.67	0.42	1.62

Panel E: Portal Cannot Advertise Competitors on a Continuous Basis

	Average Exclusivity for Alliances When…			*Test*
	False	*Intermediate*	*True*	*Statistic*
Is this a late agreement?	0.18	0.17	0.27	1.10
Is most effort required of portal?	0.27	0.12	0.23	3.20
Does portal have greater reach?	0.33	0.17	0.20	0.45
Does portal have greater revenues?	0.19	0.00	0.22	1.64

Panel F: Portal Cannot Link to Competitors

	Average Exclusivity for Alliances When…			*Test*
	False	*Intermediate*	*True*	*Statistic*
Is this a late agreement?	0.15	0.13	0.12	0.13
Is most effort required of portal?	0.10	0.12	0.23	2.26
Does portal have greater reach?	0.33	0.17	0.12	1.40
Does portal have greater revenues?	0.24	0.00	0.11	3.20

Panel G: Portal Cannot Grant Competitors Use of Certain Keywords

	Average Exclusivity for Alliances When…			*Test*
	False	*Intermediate*	*True*	*Statistic*
Is this a late agreement?	0.29	0.24	0.27	0.31
Is most effort required of portal?	0.37	0.23	0.14	4.25
Does portal have greater reach?	0.00	0.06	0.32	**6.35
Does portal have greater revenues?	0.10	0.17	0.32	4.49

Panel H: Partner Cannot Establish Any Agreements with Competitors

	Average Exclusivity for Alliances When…			*Test*
	False	*Intermediate*	*True*	*Statistic*
Is this a late agreement?	0.12	0.04	0.08	1.54
Is most effort required of portal?	0.07	0.09	0.05	0.48
Does portal have greater reach?	0.67	0.00	0.07	***16.52
Does portal have greater revenues?	0.10	0.17	0.06	1.00

Panel I: Partner Cannot Establish Certain Agreements with Competitors

	Average Exclusivity for Alliances When…			*Test*
	False	*Intermediate*	*True*	*Statistic*
Is this a late agreement?	0.21	0.04	0.23	**6.50
Is most effort required of portal?	0.17	0.16	0.05	2.12
Does portal have greater reach?	0.67	0.00	0.18	***9.86
Does portal have greater revenues?	0.14	0.17	0.14	0.03

Panel J: Partner Cannot Advertise Competitors

	Average Exclusivity for Alliances When…			*Test*
	False	*Intermediate*	*True*	*Statistic*
Is this a late agreement?	0.24	0.11	0.15	2.34
Is most effort required of portal?	0.17	0.21	0.05	2.95
Does portal have greater reach?	0.67	0.00	0.18	**9.31
Does portal have greater revenues?	0.09	0.17	0.18	0.83

Panel K: Partner Cannot Advertise Competitors in Certain Areas

	Average Exclusivity for Alliances When…			*Test*
	False	*Intermediate*	*True*	*Statistic*
Is this a late agreement?	0.26	0.22	0.27	0.34
Is most effort required of portal?	0.24	0.28	0.18	0.74
Does portal have greater reach?	0.67	0.00	0.28	***9.35
Does portal have greater revenues?	0.10	0.17	0.29	3.65

Panel L: Partner Cannot Advertise Competitors on a Continuous Basis

	Average Exclusivity for Alliances When…			*Test*
	False	*Intermediate*	*True*	*Statistic*
Is this a late agreement?	0.24	0.11	0.15	2.34
Is most effort required of portal?	0.17	0.21	0.05	2.95
Does portal have greater reach?	0.67	0.00	0.18	**9.31
Does portal have greater revenues?	0.10	0.17	0.18	0.83

Panel M: Partner Must Promote Portal at Least as Prominently as Competitors

	Average Exclusivity for Alliances When…			*Test*
	False	*Intermediate*	*True*	*Statistic*
Is this a late agreement?	0.15	0.07	0.15	1.87
Is most effort required of portal?	0.10	0.12	0.14	0.22
Does portal have greater reach?	0.00	0.11	0.12	0.40
Does portal have greater revenues?	0.14	0.00	0.11	0.95

Panel N: Partner Cannot Link to Competitors

	Average Exclusivity for Alliances When…			*Test*
	False	*Intermediate*	*True*	*Statistic*
Is this a late agreement?	0.09	0.04	0.19	4.33
Is most effort required of portal?	0.07	0.14	0.05	1.86
Does portal have greater reach?	0.33	0.00	0.11	4.01
Does portal have greater revenues?	0.00	0.00	0.13	3.77

*** = significant at the 1% confidence level, ** = significant at the 5% confidence level, * = Significant at the 10% confidence level

Table 5

Ordinary least squares analyses of the exclusivity of portal alliances. The sample consists of 106 alliances involving Internet portals between 1995 and 1999. The dependent variables are the composite measures of portal exclusivity and partner exclusivity constructed in Panels B and C of Table 4. Independent variables include the year of the agreement, the relative effort required of the portal and partner after the alliance signing on five key dimensions (with those where the most effort is required of the portal coded as –5 and the most effort by the portal as +5), the relative reach of the portal and the partner in the month before the signing of the contract (+1 denoted a case where the portal has the greater reach, -1 those where the partner did, and 0 intermediate cases), and the relative sales of the portal and the partner in the quarter before the signing of the contract (+1 denoted a case where the portal has the greater sales, -1 those where the partner did, and 0 intermediate cases). In the rightmost regression the independent variable for relative reach described above is replaced with two dummy variables indicating whether the portal has greater reach (+1 if the portal has greater reach and 0 otherwise) or the partner has greater reach (+1 if the partner has greater reach and 0 otherwise). Two regressions include controls for the type of the agreement and the portals entering into the agreements (not reported). Heteroskedastic-consistent standard errors in brackets.

	Dependent Variable					
	Portal Exclusivity		Partner Exclusivity			
Specification:	OLS	OLS	OLS	OLS	OLS	3SLS
	Basic specification	*Controlling for deal type & portal*	*Basic specification*	*Controlling for deal type & portal*	*Allowing for non-Linear Effects*	*Including pPayment Structure*
Year of agreement	.028 [.078]	-.015 [.081]	-.012 [.042]	-.000 [.055]	*-.064 [.028]	-.017 [.059]
Relative effort required after alliance signing	-.017 [.042]	-.039 [.039]	-.015 [.017]	-.004 [.024]	-.017 [.015]	-.014 [.020]
Does the portal have greater reach?	.078 [.049]	**.155 [.064]	-.042 [.088]	*-.146 [.066]		
Portal has greater reach					***.963 [.026]	***.784 [.294]
Partner has greater reach					***.214 [.037]	*.227 [.119]
Does the portal have greater sales?	-.121 [.119]	.063 [.056]	.057 [.042]	.029 [.041]	.045 [.034]	.052 [.055]
Did the alliance promote content?		**-.360 [.111]		.062 [.076]		.041 [.127]
Did the alliance promote product sales?		-.186 [.215]		-.031 [.092]		-.078 [.140]
Did the alliance involve a service agreement?		**-.370 [.148]		-.029 [.038]		-.196 [.150]
Did the alliance use royalties?						-.438 [.322]
Number of observations	106	102	106	102	106	102
F-Statistic	2.43	n.a.[a]	1.94	n.a.[a]	n.a.[a]	20.9[b]
R^2	.029	.319	.026	.155	.175	-.089[c]

[a]VCE matrix of insufficient rank to estimate regression model test statistic. This is a problem with having a number of clusters to modeling the pattern of heteroskedasticity.

[b]This is the chi-squared statistic from the exclusivity regression.

[c]This is the "R-Squared" statistic from the exclusivity regression.

*** = significant at the 1% confidence level, ** = significant at the 5% confidence level, * = significant at the 10% confidence level (two-sided test)

Table 6

Contractual contingencies in portal alliances. The sample consists of 106 alliances involving Internet portals between 1995 and 1999. The table presents several measures of contractual contingencies. In each case, the measure is coded as +1 if the provision is present in the agreement and 0 if the provision is absent. The bottom measure in each panel represents the sum of the preceding five (Panel A) or four (Panel B) measures.

Panel A: Provisions Relating to Technical Performance					
	Mean	*Median*	*Stan. Dev.*	*Minimum*	*Maximum*
Speed Target	.298	0	.459	0	1
Uptime Target	.288	0	.455	0	1
Customer Service Target	.135	0	.342	0	1
Competitive Ranking Target	.147	0	.355	0	1
Sum of Four Technical Contingencies	.852	0	1.239	0	4
Panel B: Provisions Relating to Product Market Performance					
	Mean	*Median*	*Stan. Dev.*	*Minimum*	*Maximum*
Minimum Number of Impressions	.660	1	.476	0	1
Minimum Targeted Impressions	.085	0	.280	0	1
Minimum Number of Click-Throughs	.047	0	.213	0	1
Minimum Revenue Targets	.132	0	.340	0	1
Minimum Number of New Customers	.028	0	.167	0	1
Sum of Five Market Contingencies	.953	1	.797	0	3

Table 7

Correlation between measures of contractual contingencies, timing of agreement, and industry maturity. The sample consists of 106 alliances involving Internet portals between 1995 and 1999. p-values for individual correlations are in brackets. Dashes represent self-correlations, which are omitted. Maturity is the difference between the date on which the contract was signed and the date of the first IPO in the industry subcategory of the partner firm.

Column:	Maturity (1)	Date of Agreement (2)	Technical Contingencies (3)	Speed (4)	Uptime (5)	Customer Service (6)	Competitive Ranking (7)	Market Contingencies (8)	Minimum Impressions (9)	Minimum Targeted Impressions (10)	Minimum Click-Throughs (11)	Revenue Targets (12)	Customer Targets (13)
Date	.0884 [.3746]	——											
Technical Contingencies	**-.2435 [.0152]	.0987 [.3235]	——										
Speed	**-.2278 [.0220]	.0907 [.3599]	[a]***.886 [.0000]	——									
Uptime	-.1619 [.1058]	.0623 [.5299]	[a] ***.857 [.0000]	***.7915 [.0000]	——								
Customer Service	*-.1840 [.0655]	.0657 [.5073]	[a] ***.646 [.0000]	***.4821 [.0000]	***.3707 [.0001]	——							
Competitive Ranking	*-.1921 [.0567]	.1337 [.1802]	[a] ***.615 [.0000]	***.3395 [.0005]	***.3520 [.0003]	***.2564 [.0093]	——						
Market Contingencies	**-.2128 [.0310]	-.0778 [.4278]	.1610 [.1059]	.0916 [.3552]	.0382 [.7002]	.0940 [.3426]	***.2989 [.0023]	——					
Minimum Impressions	**-.2459 [.0123]	.0466 [.6356]	-.0049 [.9608]	-.0561 [.5718]	-.0721 [.4672]	-.0091 [.9269]	*.1908 [.0547]	[b]***.7606 [.0000]	——				
Minimum Targeted Impressions	-.1310 [.1872]	.0169 [.8707]	.0374 [.7092]	.0237 [.8111]	-.0450 [.6501]	-.0212 [.8309]	.1636 [.1003]	[b] ***.4876 [.0000]	.1470 [.1327]	——			
Minimum Click-Throughs	.1450 [.1439]	.1273 [.1935]	.0644 [.5203]	.0501 [.6137]	.0533 [.5769]	-.0886 [.3709]	.1621 [.1035]	[b] ***.2375 [.0000]	-.0284 [.7729]	.0919 [.3489]	——		
Revenue Targets	-.1310 [.1901]	**-.2283 [.0186]	***.3040 [.0019]	**.2357 [.0160]	*.1842 [.0613]	.3397 [.0004]	.1562 [.1170]	[b] ***.5849 [.0000]	***.2798 [.0037]	-.0189 [.8478]	-.0868 [.3763]	——	
Customer Targets	-.0148 [.8818]	**-.2288 [.0183]	.0209 [.8347]	.0133 [.8935]	.0171 [.8634]	-.0680 [.4930]	.0916 [.3601]	[b] ***.2969 [.0000]	.0023 [.9816]	.1521 [.1196]	-.0380 [.6992]	.1014 [.3008]	——

[a]Technical Contingencies is the sum of the measures in columns (4) through (7). This is responsible for the high level of correlation between these measures.
[b]Market Contingencies is the sum of the measures in columns (9) through (13). This is responsible for the high level of correlation between these measures.
*** = significant at the 1% confidence level, ** = significant at the 5% confidence level, * = significant at the 10% confidence level

Table 8

Ordered logit regression analyses of the use of contingencies in portal alliances. The sample consists of 106 alliances involving Internet portals between 1995 and 1999. The dependent variables are the sums of five measures of the contingencies in the contract relating to product market performance (+1 denoted a case where this contractual element was present and 0 a case where it was absent) and four relating to technical performance. Independent variables include the maturity of the partner's industry segment (measured as days since the first IPO in the segment), the commercial focus of the agreement (either content, product sales, technology / service, or some combination of these three categories), the year of the agreement, the relative effort required of the portal and partner after the alliance signing on five key dimensions (with those where the most effort is required of the portal coded as –5 and the most effort by the portal as +5), the relative reach of the portal and the partner in the month before the signing of the contract (in most regressions, +1 denoted a case where the portal has the greater reach, -1 those where the partner did, and 0 intermediate cases), and the relative sales of the portal and the partner in the quarter before the signing of the contract (+1 denoted a case where the portal has the greater sales, -1 those where the partner did, and 0 intermediate cases). Two regressions include controls for the type of the agreement and the portals entering into the agreements (not reported). Heteroskedastic-consistent standard errors in brackets.

	Technical Contingencies			Market Contingencies		
	Controlling for deal type	*Including Year, Effort, and Firm Characteristics*	*Including Portal Dummies*	*Controlling for deal type*	*Including Year, Effort, and Firm Characteristics*	*Including Portal Dummies*
Industry segment maturity[a]	***-.119 [.043]	**-.090 [.041]	.027 [.060]	**-.071 [.034]	*-.058 [.033]	-.075 [.057]
Year of agreement		.137 [.226]	-.072 [.357]		-.123 [.184]	-.137 [.227]
Relative effort required after alliance signing		-.040 [.133]	.031 [.116]		-.018 [.065]	-.040 [.133]
Does the portal have greater sales?		.379 [.539]	.231 [.671]		.123 [.330]	.188 [.328]
Does the portal have greater reach?		.527 [.555]	.356 [.561]		.065 [.514]	.094 [.489]
Did the alliance promote content?	-.128 [.380]	-.261 [.451]	-.848 [.586]	.379 [.763]	.406 [.782]	.458 [.903]
Did the alliance promote product sales?	**1.41 [.611]	1.12 [.740]	1.31 [.880]	.896 [.656]	.845 [.687]	.981 [.719]
Did the alliance involve a service agreement?	1.09 [.697]	1.02 [.757]	***1.82 [.675]	.027 [.579]	-.020 [.624]	.135 [.655]
Number of observations	96	96	96	99	99	99
Log likelihood	-99.19	-97.45	-82.2	-109.19	-108.92	-106.52
Pseudo R^2	.061	.077	.222	.044	.046	.067

[a]Coefficients in this row have been multiplied by 100.

*** = significant at the 1% confidence level, ** = significant at the 5% confidence level, * = significant at the 10% confidence level (two-sided test)

Table 9

Ordered logit regression analyses of the use of contingencies in portal alliances with exclusivity as a proxy for information asymmetry regarding incentive conflict. The sample consists of 106 alliances involving Internet portals between 1995 and 1999. The dependent variables are the sums of five measures of the contingencies in the contract relating to product market performance (+1 denoted a case where this contractual element was present and 0 a case where it was absent) and four relating to technical performance. Independent variables include the maturity of the partner's industry segment (measured as days since the first IPO in the segment), the count of the number of exclusivity restrictions on the partner and portal, the commercial focus of the agreement (either content, product sales, technology / service, or some combination of these three categories), the year of the agreement, the relative effort required of the portal and partner after the alliance signing on five key dimensions (with those where the most effort is required of the portal coded as –5 and the most effort by the portal as +5), the relative reach of the portal and the partner in the month before the signing of the contract (in most regressions, +1 denoted a case where the portal has the greater reach, -1 those where the partner did, and 0 intermediate cases), and the relative sales of the portal and the partner in the quarter before the signing of the contract (+1 denoted a case where the portal has the greater sales, -1 those where the partner did, and 0 intermediate cases). Two regressions include controls for the type of the agreement and the portals entering into the agreements (not reported). Heteroskedastic-consistent standard errors in brackets.

	Technical Contingencies			Market Contingencies		
	Controlling for deal type	*Including Year, Effort, and Firm Characteristics*	*Including Portal Dummies*	*Controlling for deal type*	*Including Year, Effort, and Firm Characteristics*	*Including Portal Dummies*
Industry segment maturity[a]	***-.112 [.042]	-.087 [.060]	.013 [.062]	**-.071 [.034]	**-.070 [.032]	-.059 [.049]
Partner exclusivity restrictions	**1.46 [.671]	**1.51 [.735]	1.09 [1.17]	**1.21 [.550]	*1.14 [.620]	*1.14 [.596]
Portal exclusivity restrictions	-.017 [.172]	-.105 [.218]	-.031 [.442]	***1.52 [.225]	***1.57 [.288]	***1.75 [.248]
Year of agreement		.140 [.185]	-.100 [.383]		-.134 [.264]	-.037 [.338]
Relative effort required after alliance signing		-.025 [.155]	.035 [.170]		-.012 [.103]	-.110 [.145]
Does the portal have greater sales?		.215 [.616]	.181 [.814]		.199 [.456]	.188 [.328]
Does the portal have greater reach?		.776 [.569]	.734 [.926]		-.068 [.450]	-.154 [.451]
Did the alliance promote content?	-.444 [.495]	-.638 [.495]	-1.21 [1.01]	1.10 [.787]	1.14 [.807]	1.38 [.847]
Did the alliance promote product sales?	**1.52 [.637]	1.22 [.835]	1.12 [.1.04]	1.37 [.843]	1.35 [.981]	1.35 [1.06]
Did the alliance involve a service agreement?	**1.24 [.657]	*1.14 [.663]	***1.68 [.685]	.840 [.731]	.806 [.804]	.777 [.846]
Number of observations	96	96	96	99	99	99
Log likelihood	-95.73	-93.32	-81.08	-97.59	-97.24	-94.43
Pseudo R^2	.094	.109	.233	.145	.149	.173

[a]Coefficients in this row have been multiplied by 100.

*** = significant at the 1% confidence level, ** = significant at the 5% confidence level, * = significant at the 10% confidence level (two-sided test)

Table A1

Constructing Industry Segment Maturity. IPO data were provided by Rob Cash of JP Morgan. SIC Code derived from SEC filings collected from the SEC's Edgar Online service. Category determined by examining company description in earliest SEC filing.

Category	Company Name	IPO Date	SIC Code
Access / ISP	Netcom On-Line Communication Services, Inc.	15 Dec 1994	7389
	WebSecure, Inc.	05 Dec 1996	7374
	At Home Corporation	10 Jul 1997	7370
	Pacific Internet	05 Feb 1999	4899
	Juno Online Services, Inc.	25 May 1999	7370
	Ramp Networks	22 Jun 1999	3968
	Voyager.net, Inc.	21 Jul 1999	7389
	NetZero, Inc.	23 Sep 1999	7370
	Onemain.com	25 Mar 1999	7373
	Biznessonline.com	12 May 1999	7373
Auctions	Ebay Inc.	23 Sep 1998	7389
	Take to Auction.com	13 Jun 2000	7389
Auto Sales	Autoweb.com	22 Mar 1999	7500
	Autobytel.com	26 Mar 1999	5900
Book Sales	Amazon.com	15 May 1997	5961
	Fatbrain.com	19 Nov 1998	5990
	Barnesandnoble.com	25 May 1999	5735
Clothing Sales	Fashionmall.com	21 May 1999	5940
Electronics & Software Retailing	Egghead.com (New)	17 Apr 1997	5045
	Beyond.com	17 Jun 1998	7372
	Cyberian Outpost, Inc	31 Jul 1998	5734
	Digital River Inc.	11 Aug 1998	7373
	Pcorder.com	25 Feb 1999	5734
	iGo Corp	14 Oct 1999	5961
	Buy.com	07 Feb 2000	5734
Employment Websites	CareerBuilder, Inc.	11 May 1999	7200
	Hotjobs.com	10 Aug 1999	7361
	Headhunter.net	19 Aug 1999	7310
	E-Cruiter.com	07 Dec 1999	7389
Flower Sales	1-800-Flowers.com	02 Aug 1999	N/A
	Ftd.com	28 Sep 1999	7389
Gardening Community Site	Garden.com	16 Sep 1999	5200
Greeting Cards	Egreetings Network, Inc.	16 Dec 1999	5947
Multi-Product Retailing	Shopping.com	25 Nov 1997	5311
	Amazon.com	15 May 1997	5961
Health Sites	WebMD Corp.	10 Feb 1999	7374
	drkoop.com	07 Jun 1999	8090

	Medscape, Inc	27 Sep 1999	7375
	Healthcentral.com	07 Dec 1999	7375
Investment Information	Marketwatch.com	15 Jan 1999	2711
	Multex.com	17 Mar 1999	7374
	Thestreet.com	10 May 1999	2711
Insurance Sales	InsWeb Corp	22 Jul 1999	7389
	Quotesmith.com	03 Aug 1999	7374
Music Sales	N2K, Inc.	17 Oct 1997	5961
	CDNow, Inc.	10 Feb 1998	5735
	Launch Media, Inc.	23 Apr 1999	7375
	Liquid Audio, Inc.	08 Jul 1999	7373
	Musicmaker.com	06 Jul 1999	3652
	MP3.com	20 Jul 1999	3652
Online Advertising	DoubleClick, Inc.	19 Feb 1998	7310
	24/7 Media, Inc.	13 Aug 1998	7310
Online Communities (Professional / Industrial)	VerticalNet, Inc.	11 Feb 1999	7310
	Intraware, Inc.	25 Feb 1999	7375
Online Communities (Consumer Segments)	iVillage Inc.	18 Mar 1999	7375
	Women.com	14 Oct 1999	2741
Portals / Search	Lycos, Inc.	02 Apr 1996	7380
	Excite Inc.	04 Apr 1996	7372
	Yahoo! Inc.	11 Apr 1996	7373
	Infoseek Corp.	11 Jun 1996	7372
	go2net, Inc.	23 Apr 1997	7374
	Crosswalk.com	24 Sep 1997	N/A
	Theglobe.com	12 Nov 1998	7310
	iVillage Inc.	18 Mar 1999	7375
	Quepasa.com	24 Jun 1999	7310
	Ask Jeeves, Inc.	30 Jun 1999	7375
	LookSmart Ltd	19 Aug 1999	7373
	Sina.com	13 Apr 2000	N/A
	Sohu.com	12 Jul 2000	N/A
	About.com	24 Mar 1999	7370
	Goto.com	18 Jun 1999	7389
	Inktomi Corp.	09 Jun 1998	7373
Public Information	Infospace	15 Dec 1998	7374
	US Search Corp	24 Jun 1999	7389
Securities Brokerage	E*Trade Group, Inc.	16 Aug 1996	6211
	Stockwalk.com	26 Sep 1996	6211
	Ameritrade Holding Corp.	03 Mar 1997	6211
	Onlinetrading.com	10 Jun 1999	6211
	Web Street, Inc.	17 Nov 1999	6211
Specialty Retail	Ashford.com	22 Sep 1999	5945
Sports Information	Sportsline USA, Inc.	13 Nov 1997	7374
	Quokka Sports, Inc.	27 Jul 1999	7999

Stamp Sales	E-Stamp Corp	08 Oct 1999	5961
	Stamps.com	25 Jun 1999	5961
Toy Retailing	eToys Inc.	19 May 1999	5945
	SmarterKids.com	22 Nov 1999	5945
Travel	Cheap Tickets, Inc.	19 Mar 1999	5615
	Expedia, Inc.	09 Nov 1999	4700
	Getthere.com	23 Nov 1999	7372
Web Software	USWeb Corporation	05 Dec 1997	7373
	Verisign, Inc.	29 Jan 1998	7371
	Pacificnet.com, Inc.	24 Dec 1998	7371
	Internet Pictures Corp	25 Aug 1999	7379
	iManage Inc	17 Nov 1999	7372
Youth Community & Shopping	iTurf Inc.	09 Apr 1999	5961
	Alloy Online, Inc.	14 May 1999	5961