

STRATEGIES FOR INTERNET MIDDLEMEN IN THE INTERMEDIATION / DISINTERMEDIATION / REINTERMEDIATION CYCLE

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Last Revised: September 1998

A revised version of this paper has appeared in *Electronic Markets - The International Journal of Electronic Commerce and Business Media*, 9, 2, 1999, pp. 109-117.

Internet Intermediaries and Transaction Processes

Numerous studies of the interaction between buyers and sellers in a market can be found in the rapidly developing research literature on electronic commerce (EC).¹ This interaction usually takes the form of a *transaction process*, in which goods or services are exchanged between customers and suppliers. (See Figure 1.) This process may involve none, one or several *intermediaries* or *middlemen*, depending on the nature of the goods or services exchanged and other considerations. These intermediaries support the matching of buyers and suppliers, and provide trust to the process (Bakos 1998), essentially assuring that transactions are completed successfully.

Insert Figure 1 about here

The emergence of new technologies for electronic commerce on the Internet makes possible different ways of interacting for all the players in a market (Whinston, Stahl and Choi, 1997). Products or services that could not be offered before these technologies became pervasive today offer – and sometimes require – new roles that intermediaries have not taken on previously. Moreover, the traditional processes associated with *transacting* may be fundamentally changed when the new technologies for electronic commerce are used to support them. While some existing intermediaries view their role in terms of new competitive threats that have appeared, there are also various opportunities for new, information technology (IT)-focused middlemen (Bailey and Bakos, 1997; Bakos, 1998; Stepanek, 1998).

Although the buying and selling process may be transformed, there actually are very few cases in which Internet intermediaries provide completely new products and services to the market. By contrast, what we most often see is that intermediaries support the interaction of buyers and sellers on the Internet. Such a role – emphasizing buyer/seller support – is rarely assumed by traditional intermediaries from the outset, however. Instead, a new kind of middleman emerges: one who operates on the Internet alone.

One question that must be answered is whether these upstart players on the Internet can successfully compete with more established players in the marketplace. A central theme of this article is that the new Internet-focused competitors can use a variety of strategies to attain competitive advantage in the short run, and maintain competitive parity in the long run. However, there are very few strategies that will provide sustainable competitive advantage. Instead, competitive success depends on how well these Internet intermediaries can use their first mover advantage as new entrants to gain a head start on the incumbents, and then leverage these strategies for longer term gains.

The Intermediation - Disintermediation - Reintermediation Cycle

In related research, we proposed an evaluative framework for the strategies and tactics Internet middlemen might use based on an *intermediation (I)* – *disintermediation (D)* – *reintermediation (R)* cycle (Chircu and Kauffman 1999). We called this the “**IDR cycle**.”

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Definitions

In this article, we focus on evolving firm strategies among customers, suppliers and intermediaries. Three different types of middlemenⁱⁱ can be involved in the transaction process:

- traditional intermediaries
- electronic commerce-able intermediaries, and
- electronic commerce-only intermediaries.

Traditional intermediaries are firms that provide matching services for buyers and suppliers in a traditional market. Technology can support the relationships these traditional intermediaries have with their suppliers, as in the case of travel agents, who use computerized reservations systems (**CRSs**). IT can also support their relationships with customers, as in the case of automated telephone banking systems that enable clients to check their credit card or checking account balances. However, traditional intermediaries do not conduct aspects of their business using electronic commerce technologies, nor do they outsource to other firms who provide these capabilities .

Electronic commerce-able intermediaries (hereafter abbreviated as **EC-able intermediaries**) conduct business using both traditional methods and on-line, interactive electronic commerce applications. With the ability to participate in traditional and electronic commerce, these firms can afford to be opportunistic, biding their time if need be, to take advantage of profit-maximizing opportunities to innovate.

Electronic commerce-only intermediaries (hereafter abbreviated as **EC-only intermediaries**) are typically those that started their business in the electronic environment of the Internet. Today, they are usually reached by their customers almost exclusively via the Internet. Apart from new players, the suppliers will also fall into this category. As long as the suppliers develop EC capabilities to support direct links to the customers, and do not have any other traditional intermediation capabilities, they are actually acting as an EC-only intermediary.

The industry relationships among buyers, suppliers and middlemen can change over time due to three types of events that change the nature of the transaction process:

- intermediation (**I**)
- disintermediation (**D**), and
- reintermediation (**R**)

Intermediation occurs when a new firm interjects itself among buyers and suppliers (and possibly among other intermediaries). *Disintermediation* occurs when an established middleman is pushed out of a market niche.

Reintermediation occurs when a once disintermediated player is able to re-establish itself as an intermediary.

Irrespective of the industry context, we are able to identify three general patterns of interaction among industry players. These patterns, which depend on the number of intermediaries that connect buyers and suppliers in a traditional market, define what we will call the *traditional industry structure*. In the *no traditional intermediary case*, buyers and suppliers are connected directly. In the *single traditional intermediary case*, only one intermediary helps out by matching buyers and suppliers. An extension of this is the *multiple traditional intermediaries case*, which describes settings in which two or more intermediaries are present.

Beyond Disintermediation

Prior research has examined the perspective that transactions in electronic markets will have lower costs than those in traditional markets (Lee, 1997 and 1998; Lee and Clark, 1996). As a result, traditional intermediaries risk being eliminated from the electronic markets, because buyers and suppliers can interact more easily using the new technology (Malone, Benjamin and Yates, 1987). However, electronic markets have specific intermediation needs, such as aggregation, one-stop shopping, trust provision and filtering (Bailey and Bakos, 1997). While disintermediation may occur in the short run, the disintermediated players are very likely to fight back and reintermediate themselves. The transformation of the traditional industry structure in the presence of technological innovations for electronic commerce can be understood in terms of *intermediation*, *disintermediation* and *reintermediation*. As the reader will soon see, firm strategy selection, irrespective of industry structure, may cause the IDR cycle to occur repeatedly, as new technological innovations are introduced.

Our IDR cycle framework emphasizes the need to consider both short run and long run perspectives about the competition that will ensue. It also aims to explain why these scenarios are likely to be very different. This framework

enables us to analyze the competition among new and traditional intermediaries, and predict what strategies are likely to lead to sustainable competitive advantage.

The “No Traditional Intermediaries” Case

When *no traditional intermediaries* are involved in a transaction, EC -only intermediaries have a chance to capture benefits from those parts of transaction that can be automated. (See Figure 2.)

Insert Figure 2 about here

EC-only intermediaries emerge when the new technologies make possible transactions that had previously been too costly to perform until now. Another opportunity for EC -only middlemen is to intermediate by providing new, value-added services for customers through aggregation. In the intermediation phase, EC-only intermediaries will have built up strong relationships with a growing number of clients. However, in this phase it is also possible for other industry players, who already have traditional intermediation roles for other products and services, to emerge as EC -able intermediaries for the new products and services. As the new intermediaries create awareness for their on-line transacting mode, the direct customer-supplier links will still be strong, but not for long. In the IDR cycle, the EC-able middlemen are better positioned than their EC -only counterparts to become the strongest intermediaries. In the short-run, their relationships with the on-line customers will still be weak, since they will not yet have state-of-the-art electronic commerce applications. However, as they develop or acquire the necessary technology, the reintermediation phase begins. At the same time, the EC -only intermediaries will either be disintermediated, due to their inability to compete with a much more powerful player, or will voluntarily disintermediate themselves by becoming technology providers for traditional players. Even if disintermediation and reintermediation occur here at the same time, we can still characterize the evolution of the industry structure using the IDR cycle.

The “Single Traditional Intermediary” Case

When a *single traditional intermediary* provides aggregation of physical products and matching of customer and suppliers, it may be less costly to provide the same intermediation services electronically. (See Figure 3). Therefore, in the intermediation phase, EC-only middlemen will start to offer products and services similar to those available in a traditional market.

Insert Figure 3 about here

EC-only players will probably have weak links with customers, due to the novelty of their product and service offerings, and approach, while the links of other traditional intermediaries to their business partners may be strong. As EC-only intermediaries attract more customers, the disintermediation of traditional players phase begins. In this phase, the connections between the traditional intermediary and the market participants will start to weaken, as market share is lost.

However, it is very likely that a powerful traditional intermediary will be able to imitate the technological innovation of an EC -only intermediary. By doing so, the traditional middleman is able to fight back against disintermediation, and the reintermediation phase begins. In this phase, a traditional middleman will seek to strengthen its links with customers and suppliers even more, while limiting market share gains that the EC -only intermediary can obtain. Another possible outcome is the transformation of the EC -only intermediary from a competitor to an IT -provider for the traditional intermediaries. This voluntary disintermediation of the EC -only player will enable it to retain the benefits of its technological innovation.

The Multiple Traditional Intermediaries” Case

When *multiple traditional intermediaries* are involved in the transaction, a more complicated IDR cycle may occur. Each of the middlemen can be disintermediated by the existing or new players who take advantage of the technological innovations for electronic commerce on the Internet. (See Figure 4).

Insert Figure 4 about here

In this case, we will be able to identify multiple IDR cycles (one for each traditional intermediary) that might evolve simultaneously or not. Each one of these IDR cycles is very similar to what happens in the “single traditional intermediary” case. As EC-only players enter the market, the affected traditional intermediary will be threatened by disintermediation. In the long run, however, it will be able to reintermediate itself if it employs the right combination of

strategies. The first IDR cycle usually starts with the intermediary positioned close to customers (i.e. Intermediary 1 in Figure 4). However, as this traditional middleman fights back, the EC-only firms are likely to expand and threaten the other intermediaries (such as Intermediary 2 in Figure 4). This may give rise to a new IDR cycle.

Analyzing Strategies for Internet Middlemen

We have chosen several well known mini-cases to illustrate how the IDR cycle framework can explain some of the firm strategy and industry structure changes we are seeing since the emergence of electronic commerce on the Internet. (See Table 1.) Our illustrations are organized according to the industries from which the mini-cases are drawn.

Insert Table 1 about here

Financial Services

The financial services sector contains several examples of the IDR cycle and the firm strategies that relate to it.

Internet Micropayments. Digital Equipment Corporation emerged as an EC-only intermediary for micropayments with its deployment of the Millicent micropayments system.ⁱⁱⁱ Digital's micropayments technology enables transactions whose cost was prohibitive in traditional markets by assuring efficient payment procedures. In the context of its involvement in the market that requires transactional micropayments, Digital does not plan to be the only one who offers micropayments services. Instead, it designed Millicent such that brokers will provide aggregation of products and buyer/supplier matching. Digital will be a technology provider, and not a pure intermediary. Thus, while Digital may appear to be *voluntarily* disintermediating itself, it is actually allowing other players to reintermediate the electronic market for micropayments as brokers. In this case, the strategy followed by the EC-only intermediary is clearly one of *technology licensing*.

Electronic Bills. The same kind of technology licensing strategy can be identified for the bill presentment process (another "no traditional intermediaries" example) and the bill payment process (a "multiple traditional intermediaries" example). In these two related instances, EC-only intermediaries such as Checkfree (a substitute service provider for payments by bank-processed paper checks and postal delivery of bills) and MSFDC (a competing joint venture of Microsoft and First Data Corporation) emerged.^{iv}

Although these intermediaries could, in theory, offer Internet-based bill presentment and payment services directly to the market through their web sites, their strategy has involved *partnering for application development* with banks. If we think about their roles in terms of this strategy, then the competition becomes one for the "high ground" in the marketplace. The creation of a *de facto* or actual standard, once established, confers great market power to its primary vendors. So electronic intermediaries have a huge stake in being a part of the process that leads to standard software solutions within the industry.

In order to achieve this goal – defining transactional standards in the market – some EC-only intermediaries have chosen to follow *an alliance strategy*. Their strategy involves combining the expertise of a traditional market player (in this case, First Data Corporation) and an IT provider (like Microsoft). As a result, they are able to develop EC software applications, start offering them to clients to create awareness for the services, and then follow up by offering them to other industry players interested in buying the technology.

Retailing

The retail sector contains several examples of the "multiple traditional intermediaries" and "single traditional intermediaries" IDR cycles, and the strategies we associate with them.

Bookselling. The on-line bookstore, Amazon.com, offers a case in point. It is still extremely popular among customers, even if the most powerful traditional intermediaries (e.g. Barnes and Noble) have become EC-able. Faced with reintermediation by traditional players, as well as with increased competition from other Internet intermediaries and other middlemen that have long been a part of the distribution channel for bookselling, EC-only intermediaries must respond.

Amazon.com has begun to pursue a mix of strategies intended to assure at least competitive parity, if not advantage. For example, the firm is clearly pursuing a *technology licensing* strategy. It has adopted a prudent approach of enabling websites to open their own bookstores without actually taking ownership of Amazon's technology. The licensing website simply links to Amazon.com, and, for all the purchase requests that are generated for a downstream vendor, Amazon.com charges a commission.

This revenue-sharing opportunity has attracted some 60,000 associate websites, which help Amazon.com gain access to more consumers on the Internet. This licensing approach clearly provides opportunities for *partnering for access* to a large number of potential customers. In this case, the strategy may seem safer because the EC-only intermediary does not give up one of its most valuable assets – the IT that enabled it to intermediate in the first place. However, this strategy can be imitated easily, as proven by a similar partnering program launched by the now EC-able intermediary, Barnes and Noble.

We find that *partnering for access* to a larger audience is a strategy followed by many intermediaries in the retail sector. The partner sites appear most often to be firms that supply search engines to the Internet, such as Yahoo and Excite, and Internet service providers (**ISPs**), such as AOL. For example, Amazon.com is the bookseller of choice on AOL, the largest ISP in the United States.

CDs and Music. The on-line retail market for music recordings offers additional illustration of the partnering for access strategy. For example, Musicboulevard.com, an EC-only music store, has an exclusivity arrangement with the Excite search engine (www.excite.com) and the AOL Europe website. CDNow.com (www.cdnow.com) also has signed an exclusive \$18 million agreement with another popular search engine provider, Lycos, and the Tripod Network.

Lycos and Tripod together claim a subscriber/user base of 15 million people. According to Bob Davis, Lycos' CEO: "Lycos will deliver an incredible amount of traffic to CDNow" (InternetNews.com, 1998) – traffic that CDNow.com would be unable to generate on its own, with any other non-partnering strategy. Meanwhile, CDNow.com has begun to sell the electronic commerce applications it developed for its own on-line operations to other intermediaries.

Automotive Retailing. The auto retailing business is another interesting "single traditional intermediary" example. Traditional car dealers have felt threatened by EC-only intermediaries such as AutoByTel (www.autobytel.com) and Microsoft's CarPoint (carpoint.msn.com). In the case of AutoByTel, dealers soon discovered, however, that they could reintermediate by using the same kind of partnership approach that AutoByTel was providing to them. Thus, many car dealers became EC-able by becoming connected to the AutoByTel website.

This enabled AutoByTel to employ one strategy we have already discussed, *technology licensing*, and one we have not, *partnering for content*. AutoByTel's licensing approach involved requiring dealers to pay fees for being listed on the website and receiving orders. In addition, AutoByTel maintains large databases of available cars for dealerships which they serve, permitting dealership sharing. This "virtual" product variety increases clients' ability to sell cars. This partnering for content approach enables AutoByTel to perform product aggregation, making its service offerings all the more attractive to its clients.

As we have seen in other retailing settings, AutoByTel recognizes the value of a *partnering for access* strategy too. It acts as the exclusive car buying service on the search engine Infoseek and sponsoring the car buying page of AT&T WorldNet service, a one-million subscriber ISP.

Other Industries

The perspective we offer is affirmed by the experience of firms and market structure developments in other industries, including real estate and the markets for hobby goods.

Real Estate. The real estate sector has historically had "single traditional intermediaries." Buying and selling houses has occurred with the help of real estate agents and their agencies, such as RE/MAX, Coldwell Banker and Edina Realty. Today, however, searching for a house can be done via EC-only intermediaries. Previously, alternatives to real estate agency-controlled "multiple listing services" (**MLSs**) of homes for sale were very limited. As a seller, it was necessary to rely on a real estate agency for listing "distribution." And, as a buyer, it was necessary to rely on a real estate agency to gain access to the best listings.

Owners.com (www.owners.com) was established by Abele Information Systems, Inc. in May 1996, as a searchable national Internet-based database for American home sales. Owners.com specializes in non-brokered, "for sale by owner" (**FSBO**) properties, where the intent of the owner is often to transact with minimal transaction fees. Traditionally, the transaction costs associated with FSBO home sales were unattractive, often resulting in a less than best price for the seller. Owners.com's value-added service suite provides not only house listings, but also mortgage information and useful tips for homebuyers.

As we have seen with other Internet-focused intermediaries, various partnering strategies for content and access are appropriate. For example, Owners.com has non-exclusive arrangements with HomeShark (www.homeshark.com) and

E-Loan (www.eloan.com), on-line content providers for discount home mortgage services that make a potential buyer's search for a mortgage loan easier and cheaper. Owners.com also partners with Yahoo, the most visited site on the Internet for real estate classified advertising (classifieds.yahoo.com) to increase access to potential buyers.

Other EC-only intermediaries, such as HomeSmartUSA (www.homesmart.com), act as digital referral sources by pre-screening non-electronic real estate agents for home buyers and sellers. Although such intermediaries did exist in the real estate marketplace prior to the Internet, they did not provide extensive geographic coverage. HomeSmartUSA aggregates information of national scope about a large number of real estate agents. The listed agents benefit as potential buyer search costs for an agent are reduced with immediate electronic referral.

The National Association of Realtor's (NAR) Realtor.com works in a similar manner on behalf of 720,000 realtors who pay dues for a listing and subscribe to the NAR's code of ethics. Obviously, this group did not begin with an Internet strategy. Instead, it created a presence on the Internet to fight back and ensure that its membership would not be disadvantaged as electronic FSBO transactions increase.

Markets for Hobby Goods. A final example of the "single traditional intermediary" case is found among auctions for collectibles and hobby goods (e.g., postage stamps, coins, toys and sports cards, etc.). Traditional auction houses (e.g., Christie's and Sotheby's) and large hobby specialist firms have been slow or unwilling to respond to threats of disintermediation. They apparently perceive that their clientele will remain secure for some time to come, and that their margins are not significantly reduced as on-line auction sites emerge.^v

Nonetheless, small and entrepreneurial EC-only intermediaries are thriving on the Internet, though at present, they appear to be competing mostly among themselves to represent individuals or much larger traditional middlemen. In this context, the natural strategy is *partnering for content*. For example, some firms in the postage stamp auction business not only list on their websites the results of their own auctions. They also carry a collection of links to a variety of other auction sites on the Internet (e.g. Collectors Auction, www.collectorsauction.com). Others act as digital intermediaries that bring the auctions of non-electronic traditional middlemen and larger brokers to the Internet. In the postage stamp collectors' market, for example, On-Line Auctions (www.collectormall.com/stamps) and Stamp Auction Central (www.stampauctioncentral.com) fill this role. They list the auctions of well known postage stamp houses and aggregate dealer price lists. Still others focus on both individual collectors and providing aggregation and referral services. One example is www.StampAuctions.com, which also competes with E-Bay (www.ebay.com), the mega-auction website. This firm provides buyer and seller profiles that aid Internet-based transactors to assess the qualities of counterparties to their transactions.

A final example is Hunter's Stamp Auction (www.stampauction.com), which is based in the United Kingdom. The firm operates its Internet site as a "mail bid" auction with only opening bid prices listed. This mechanism is intended to parallel the firm's monthly physical auctions, where transactions have traditionally been carried out as on a mail and face-to-face basis elsewhere. Other firms are exploring multiple ways to transact, as well.

Summary and Conclusions

The mini-cases presented above enabled us to identify a series of competitive strategies firms use in the IDR cycle (see Table 2): partnering for access, technology licensing, partnering for content, and partnering for application development. Each of them varies in the ability they confer to the firm to achieve sustainable competitive advantage in its marketplace.

Insert Table 2 about here

Partnering for access is a strategy used not only by EC-only intermediaries, but also by their EC-able competitors. This approach, as we have seen, involves contracting – to the extent this is possible – for exclusivity agreements with high-traffic websites, such as search engines and ISPs. Because this strategy is readily available to other intermediaries, its success critically depends on the success of the chosen partners. It probably is not a means to achieve sustainable advantage. What may be viewed as unique resources *at the moment* can later be mimicked, as other firms who wish to enter and compete on a similar basis achieve similar combinations of resources.

Technology licensing, based on our scan of the financial services and retailing, seems to be another widely used strategy in the IDR cycle. It may be the most compelling reason for why voluntary disintermediation of Internet-focused middlemen occurs. Moreover, it is likely to offer sustainable competitive advantage when used in combination with a continuous innovation strategy. Our view is that technology licensing seems most suited to cases in which the benefits from intermediating individual transactions are lower than the benefits from providing the technology for other industry players. This strategy is also effective in securing advantage over traditional intermediaries by licensing EC applications to them.

Partnering for content, which often involves product and information aggregation, is another widely used strategy by EC-only intermediaries. This strategy is likely to work best for first movers. However, sustainable competitive advantage cannot be achieved through this strategy: other players can easily imitate it quite easily, as we have seen in the mini-cases.

Finally, *partnering for application development* involves an alliance between a technology provider and a well-established industry participant. This strategy is more likely to be used for new services, where “no traditional intermediaries” have been present. This strategy can also be used for managing the risk of developing large and very complex applications for the Internet. If the right combination of technology and industry expertise is achieved, as we saw with Microsoft and First Data Corporation, this strategy has the potential of generating sustainable competitive advantage.

Competitive advantage from the EC innovation alone is therefore difficult to sustain. This is not a surprising finding, as previous research in IT and competitive advantage shows (Mata, Fuerst and Barney, 1995). As the reader can see from Table 2, each strategy requires a different combination of firm capabilities and environmental conditions which might be hard to attain by all Internet intermediaries. Therefore, these intermediaries should not rely on the technological innovation alone if they want to be successful in the marketplace.

We are continuing our research on Internet-related intermediation and firm strategy issues with an emphasis on the travel industry, where some of our initial ideas about the IDR cycle were developed. The travel industry, similar to some of the other industries we have discussed in this article, is currently undergoing significant change – change which we believe can be described quite well by our IDR cycle framework. The interested reader should read Chircu and Kauffman (1998) to get a sense of the extent of the support for these ideas offered by an in-depth case study of a single industry: managed corporate travel.

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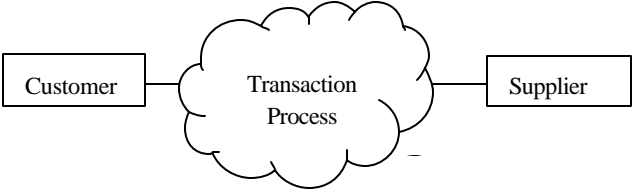


Figure 1. The customer-supplier transaction process

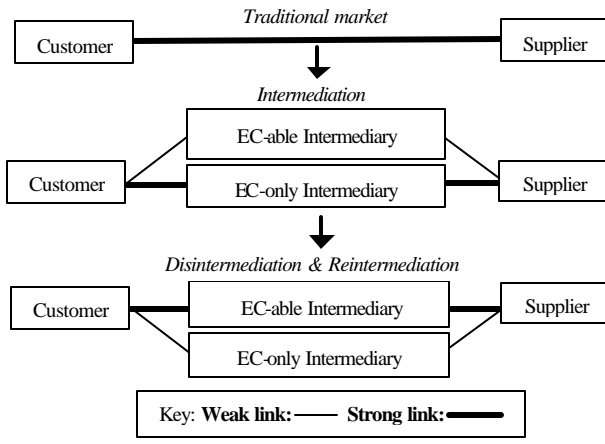


Figure 2. The IDR cycle, "No traditional intermediaries" case.

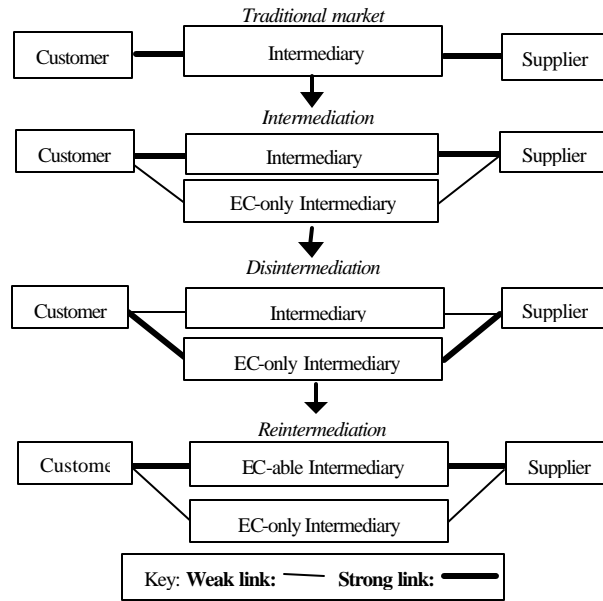
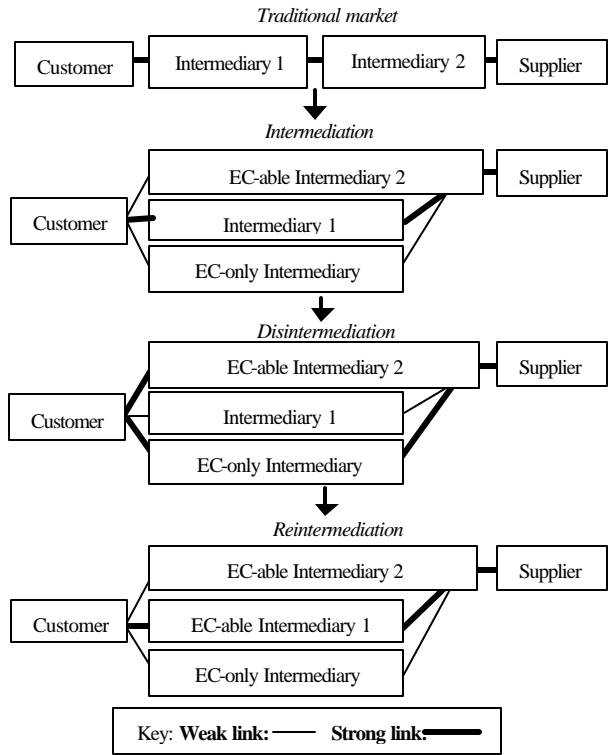


Figure 3. The IDR cycle, "Single traditional intermediary" case.



*Figure 4. The IDR cycle,
"Multiple traditional intermediaries" case.*

Industry Sector	Case	Traditional Intermediaries	EC-Only Intermediaries	Traditional Industry Structure
Financial Services	Bill presentment	None	Checkfree; MSFDC	No traditional intermediaries
	Bill payment	Electronic data and funds transfer networks; banks	Checkfree; MSFDC	Multiple traditional intermediaries
	Micropayments	None	Digital's Millicent	No traditional intermediaries
Retail	Books	Barnes and Noble; wholesalers	Amazon.com	Multiple traditional intermediaries
	CDs	Tower Records; wholesalers	Musicboulevard.com CDNow.com	Multiple traditional intermediaries
	Cars	Car dealers	Auto-by-Tel MSN Carpoint	Single traditional intermediary
Real estate	Buying/selling	Real estate agents and agencies	Owners.com HomeSmartUSA	Single traditional intermediary
Collector goods	Postage stamp auctions	Traditional auction houses	On-Line Auctions Collector's Auction StampAuction.com	Single traditional intermediary

Table 1. Traditional and EC-only intermediaries

Strategy	Description	Conditions for Sustainable Competitive Advantage	Environmental Conditions Under Which the Strategy Is Appropriate
Partnering for content	The electronic intermediary becomes an aggregator for products and services (which may be offered by EC-only, EC-able or traditional players).	The intermediary can customize and brand the content, as well as retain control over customers' transactions.	Market niches are not yet stable; market search costs are too high; and insufficient value is available for firms to be able to appropriate it with individual offerings via the Internet; opportunities to create value through product or content aggregation still exist.
Partnering for access	The electronic intermediary becomes the provider of services for other agent involved in electronic commerce, e.g., search engine and Internet service providers.	The partner is a leading on-line service provider with whom the Internet middlemen has an exclusivity agreement.	Cost pressures begin to favor rationalization of Internet-focused software development; some Internet services begin to achieve dominance or become <i>de facto</i> standards; but service provision may be incompletely covered.
Partnering for application development	The electronic intermediary forms alliances with established industry participants.	The right combination of assets (technological and industry-specific expertise) is obtained through partnering.	No technology standards have been established yet, but establishing one would confer significant value upon participants in the coalition of organizations promulgating the standard; firms may have formed agreed upon estimates of the value of Internet marketplace.
Technology licensing	The electronic intermediary becomes a technology provider for other web sites, either by selling them the technology or by sharing the profits resulting from transactions referred by other web sites.	The middleman is continuously innovating and licensing.	The profits from providing products or services on-line are lower than the profits from being a technology provider for other EC-only and EC-able intermediaries.

Table 2. Strategies for Internet middlemen

ⁱ For example, see Bailey and Brynjolfsson (1997); Bailey and Bakos (1997); Bakos (1997 and 1998); Lee (1998); Matsuda, Clark and Lee (1997); Sarkar, Butler and Steinfield (1995); and Steinfield, Kraut and Plummer (1995), among others.

ⁱⁱ For another useful definitional discussion of market intermediation, see Sarkar, Bulter and Steinfield (1995). The authors use the term traditional intermediary, as we do here. They also discuss *cybermediaries*, the new "network-based" players on the Internet and elsewhere. The authors make no distinction, as we have, regarding the extent of the focus on the Internet alone. Instead, they emphasize the multiple potential interpretations of the transaction cost theories of Coase (1937) and Williamson (1975) in the context of business transactions among networked organizations, critiquing the *threatened intermediary hypothesis* that is most often cited in the literature.

ⁱⁱⁱ For more details about Digital's Millicent micropayments technology, see www.millicent.digital.com.

^{iv} For additional information on these Internet-only intermediaries, see www.checkfree.com and www.msfdc.com, respectively.

^v This may be the case because traditional auction houses remain important institutional delivery mechanisms via their "human" networks for *liquidity*. This is the ability to buy or sell some market-exchanged good, service or instrument rapidly and at prices that are representative of fair value, with low transaction fees.