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Electronic Business Industry Impact

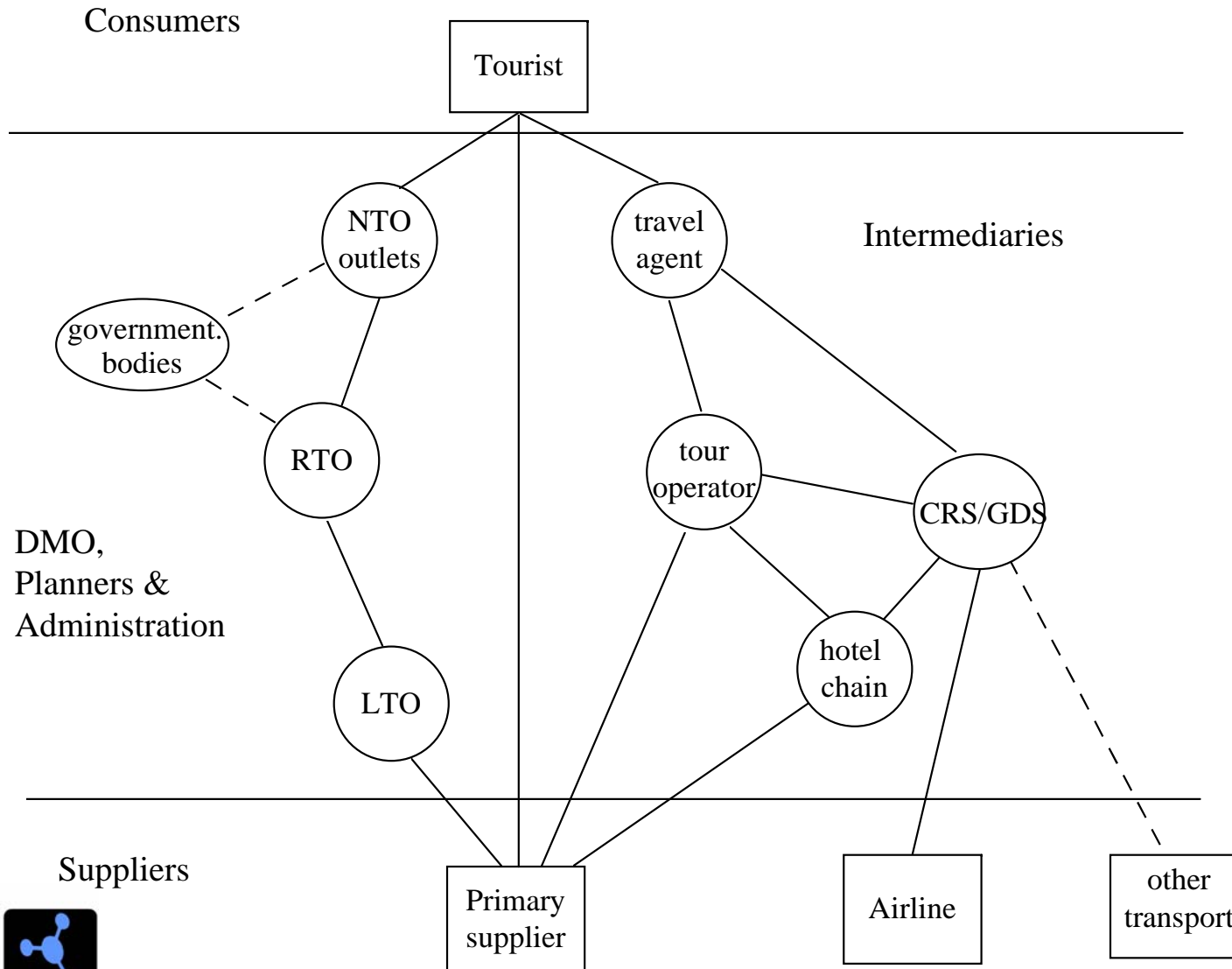
Dr. Hans-Dieter Zimmermann
Lehrstuhl für Wirtschaftsinformatik und
Interorganisationssysteme
Institut für Wirtschaftsinformatik
Universität Münster



Outline

- Move-to-the-market and disintermediation/ cybermediation debate
- Some evidence from the scheduled airline ticket market
- Interpretation, open issues, conclusions

Case1 Tourism market structure



[Werthner; Klein 1999]

Contingencies: Product and Service Features

- Tickets are **non-transferable contracts**
- high level of fixed cost, **low marginal cost** per passenger (about 13% of the overall cost)
- high level of **differential pricing** (up to 20 different booking classes are defined for a single flight in which only two (or three) service classes)
- The **product spectrum** is a continuum between:
 - comprehensive offerings of the big international airlines or airline alliances with millions of possible routes in a hub & spoke network, connections to the main metropolitan airports, and complimentary inflight service and
 - smaller, mostly independent airlines which offer a limited number of direct connections, often to smaller airports and in most cases no complimentary inflight service in return for aggressively priced tickets

Impact of the Web

Overall expectation:

the Web is going to become a major channel because of

- the salience of **rich and topical information** for customers,
- tourism suppliers address a **global audience** and almost every Internet user is a potential customer,
- **intense competition on the Web** among incumbents and new players has led to the emergence of numerous leading Web sites, which offer a wealth of multi-media information and efficient transaction support.

The dynamics of market structure changes: first act

Airlines sell direct
and change the
rules of the game,
e.g. auctions and
commissions

The screenshot shows the Lufthansa website interface. At the top, there's a navigation bar with 'InfoFlyway' and 'Willkommen'. Below that, a 'News' section features several articles:

- Doppelte Meilen-Aktion:** Bis zum 30. April erhalten First und Business Class Gäste der Lufthansa Flüge zwischen Frankfurt und Bogota, Caracas oder Philadelphia doppelte Meilen. Jetzt anmelden!
- Extrameilen im SkyShop:** Bestellen Sie Reisegepäck und mehr online im SkyShop und Sie erhalten zusätzlich 250 Meilen auf Ihr Miles & More Konto.
- ITB 2000: rent@sixt:** Sixt bietet Ihnen Sonderraten zur ITB in Berlin. Buchen Sie die ITB-Specials direkt online und Sie erhalten 1.000 Meilen.
- Lufthansa Partner Tours:** Bestellen Sie jetzt kostenlos den neuen Katalog mit attraktiven...
- Der Weg ins Cockpit:** Sie möchten sich einer Herausforderung stellen? Dann starten Sie als Nachwuchsflugzeugführer bei Lufthansa.
- Lufthansa Bildarchiv!** In unserem Bildarchiv finden Sie aktuelle und historische Fotos zum Herunterladen - auch als Druckvorlage geeignet.

The left sidebar contains navigation links for 'Reise' (Buchung, Lufthansa Specials, Flugplan, ReiseShop, Ankunft/Abflug, Product & Service, Miles & More), 'Lufthansa' (Rund um Lufthansa, Investor Relations, Presse, Allianzen, Career), and 'Extras' (FAQ, Mein Profil, Index). A 'Lufthansa Live Auction' banner is also visible, showing '14.3. Miles & More'.

Success rates of online direct sales

While Lufthansa achieved a direct sales ratio of 7-8% in 1999 and forecasted 14% for 2003, other players are doing far better: Southwest sold 27% online in January 2000

12 December 2000

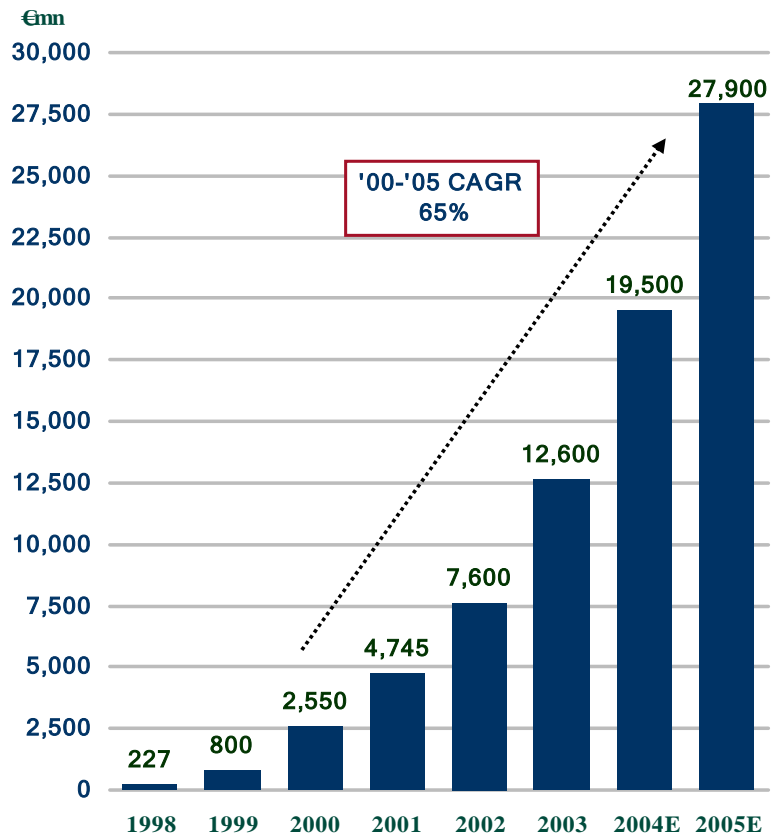
passenger and Internet statistics, November 2000

Below are the easyJet passenger and Internet statistics for November 2000. This information will be published on a monthly basis.

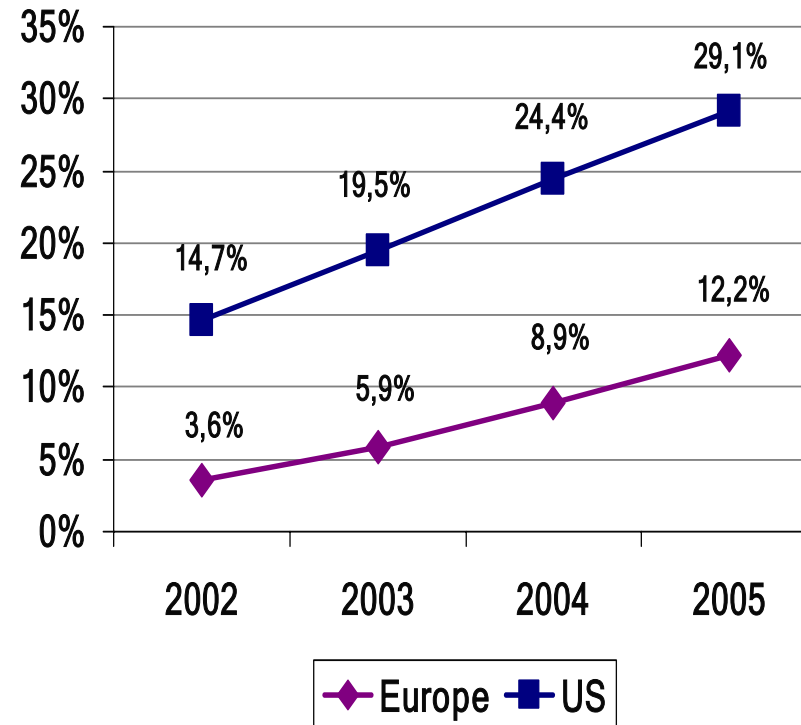
	November 2000	November 1999	12 months ending 30 November 2000
<i>Passengers⁽¹⁾</i>	498,796	374,703	5,887,402
<i>Load Factor⁽²⁾</i>	80.0%	76.3%	81.5%
<i>Internet Sales Percentage⁽³⁾</i>	79.4%	50.0%	69.5%

The European online travel market

European Online Travel Market Size⁽¹⁾



Online Travel Penetration⁽¹⁾



1. Source: PhoCusWright

The U.S. online travel market

Total Online Booking Revenue and Channel Share, 2003 to 2009		
Year	U.S. Online Travel Booking Revenue	Percentage of Total U.S. Travel Revenue
2003	\$46 billion	20%
2004	\$54 billion	23%
2005	\$62 billion	26%
2006	\$70 billion	28%
2007	\$77 billion	30%
2008	\$84 billion	31%
2009	\$91 billion	33%

Source: JupiterResearch Internet Travel Model, 2004

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Luftfrachtführers

Buchung

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Von
Von ->

Nach
-> Nach

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11 Juli 2005

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0 Kleinkinder (unter 2
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The dynamics of market structure changes: second act

CRS/ GDS
build online
travel
supermarkets
for consumers

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Travelocity.de Home Inhalt

Aktuell bei Travelocity
Unsere Traumkarten zeigen Ihnen Flugziele für Ihr persönliches Reisebudget. **Neu!**

Flüge Unterkünfte Mietwagen Last Minute

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 Von: [] Nach: [] Reisende: [1]
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Nordland-Kreuzfahrt Fantastische Landschaft! Inkl. Ausflug, Mai 2002 **ab EUR 761,-** [Details](#)
Nil-Kreuzfahrt Luxusklasse Kreuzfahrt! Inkl. Badespass, Sommer 2002 **ab EUR 799,-** [Details](#)

Second act: New Web-based roles for intermediaries (2): CRS/ GDS

CRS/GDS
build online
travel
supermarkets
for consumers

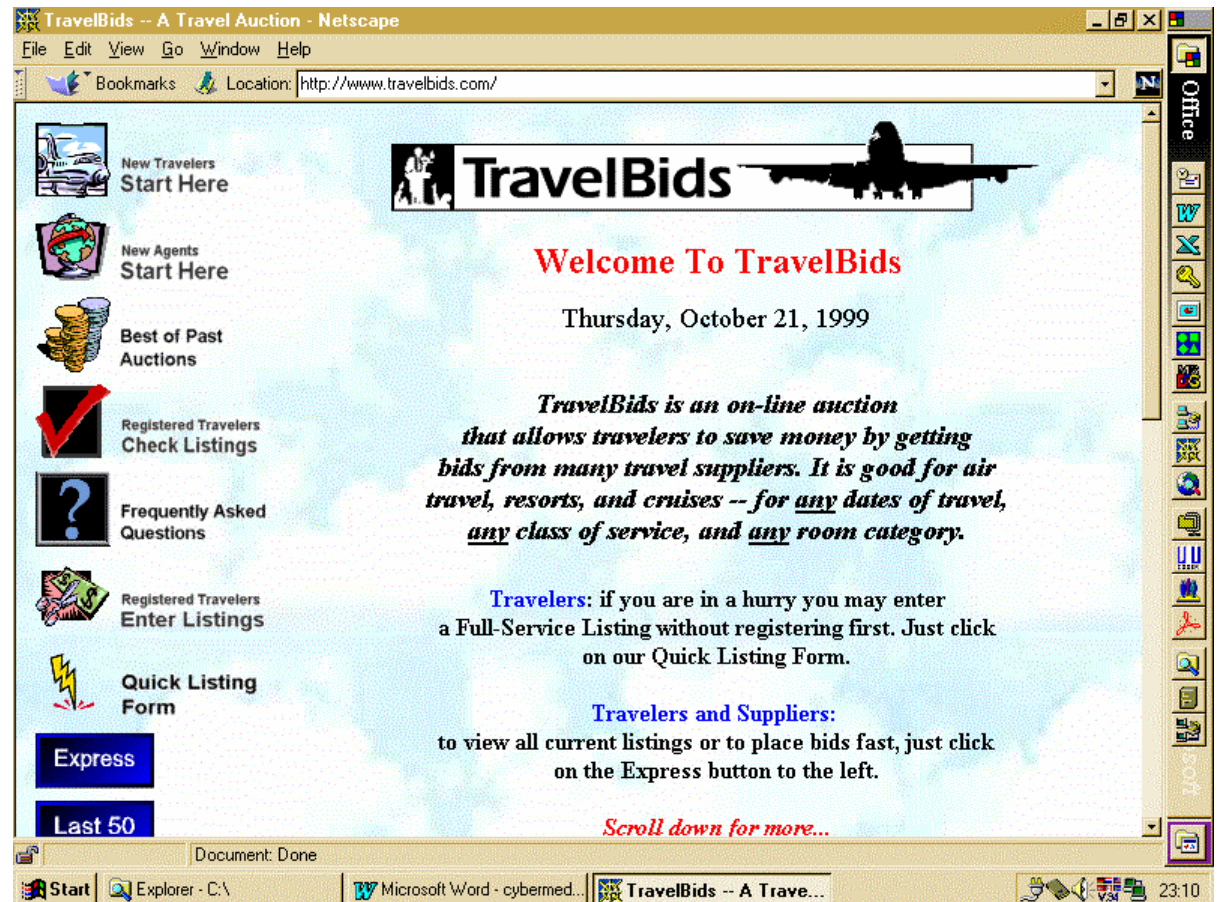
1999: merger with Preview travel
-> consolidation and concentration

2000: marketing alliance with
Priceline.com, America Online and
several airlines
-> criss-crossing alliances

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The dynamics of market structure changes: third act

New players (so-called cyber-mediaries) position themselves prominently as consumers' advocates with innovative pricing models (demand collection, demand aggregation, reverse auction)





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The Names
ow and Trust.

Intermediaries' functions and value propositions

- information services, such as price and product comparisons → **information costs**
- efficient coordination of exchange relations, e.g. demand collection and aggregation → **allocation costs**
- balancing suppliers' interest and customer needs, often focusing on the role as **consumers' advocate**
- adding distinctive value, typically based on the potentials of the Web, e.g. innovative **cooperation models**
- specific exchange institutions such as trust and credibility mechanisms → **extended value propositions.**

The dynamics of market structure changes: fourth act

Wall Street Journal: Airlines co-operate to Win Online Market Share

Apr 14 2000: Twenty-seven airlines have joined together to establish a new one-stop-shop reservations site in a bid to compete aggressively online with existing sites such as Travelocity and Priceline.com.

- 11 European Airlines are pursuing a similar strategy (online travel marketplace 'Otopenia')
- The airlines' move can be interpreted as an imitation of the CRS' online strategy and is motivated by high costs of tourism Web sites and assumptions about customer preferences

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Flying Forecast

Low clouds postpone flights into [Boston and LaGuardia](#), (11:25 a.m. CDT)

Biological X-ray

Salt Lake City Airport plans to introduce a new device to help [prevent a foot-and-mouth epidemic](#).

Road Work

Stay in shape while traveling. [Fitness experts tell you how.](#)

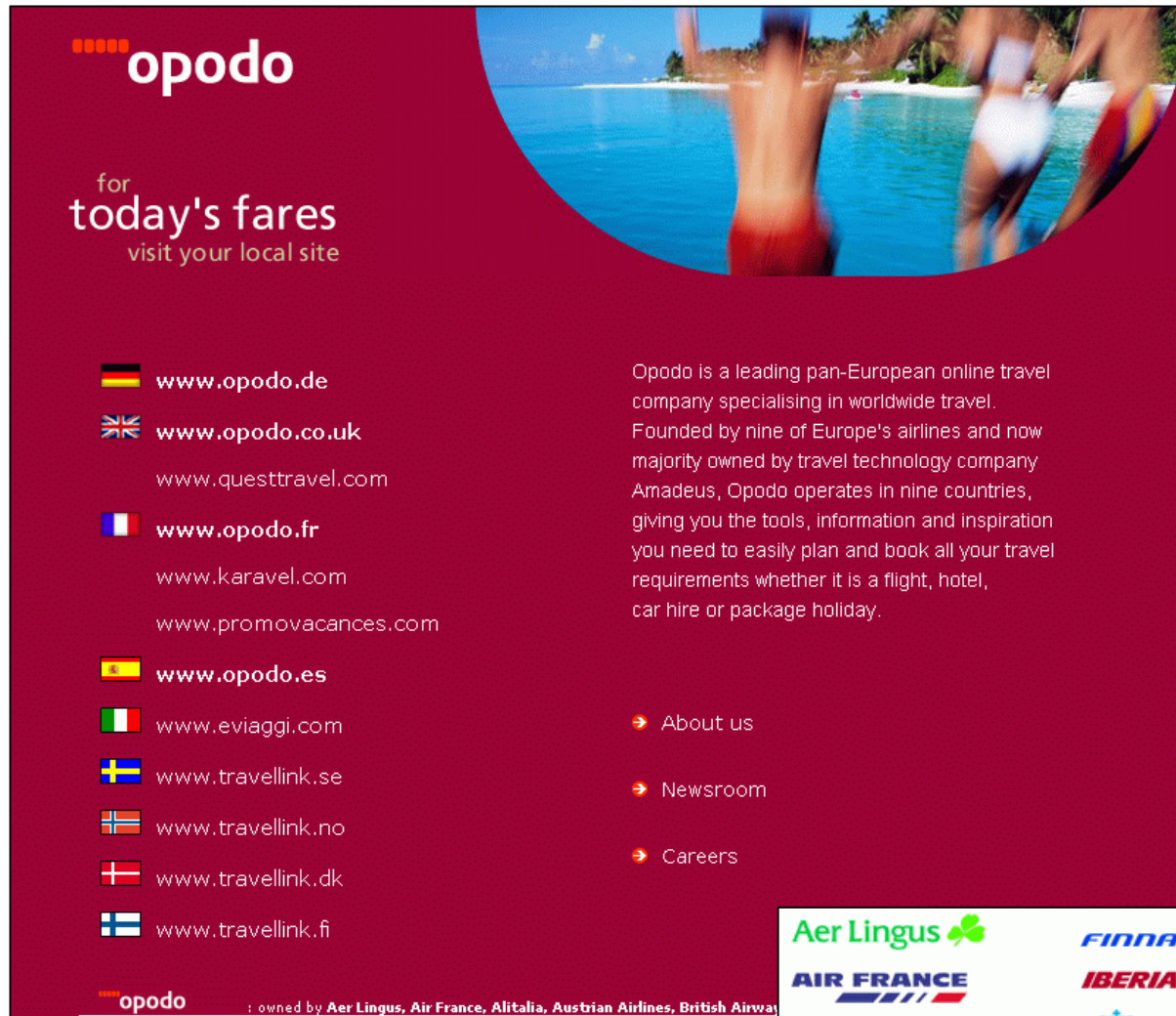
Select an a

Flight # Today


Predatory disintermediation ?


- The announcement has not been well received in all quarters. The **American Society of Travel Agents (ASTA)** has demanded an investigation into the planned site from the Justice Department. ASTA says the site would offer an ‘opportunity’ for collusion on pricing .
- ALEXANDRIA, VA, April 13, 2000 - The **Coalition for Travel Industry Parity (CTIP)** has sent a letter to the Attorney General of the Department of Justice's Anti-Trust Division announcing that it fully supports the complaint filed by the American Society of Travel Agents (ASTA) regarding the proposed 27-airline joint Web site.
- The **German Travel Agents Association** (Deutsche Reisebüro- und Reiseveranstalter-Verband) has asked the federal anti-trust agency (Bundeskartellamt) to check the announced alliance.


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opodo owned by Aer Lingus, Air France, Alitalia, Austrian Airlines, British Airways

- Opodo is owned by nine of Europe's leading airlines - Aer Lingus, Air France, Alitalia, Austrian Airlines, British Airways, Finnair, Iberia, KLM, Lufthansa and by Amadeus GDS, and travel industry technology provider.
- Launch in 2001



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Does FareGuard only check for changes on the specific flight I booked? No. FareGuard will even identify cheaper flights from alternative airports in your area or at alternate times on the same day you're scheduled to depart.

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How will I be notified? We will e-mail you with the details of the cheaper flight. This e-mail will also tell you how to contact us to change flights, if you choose to do so.

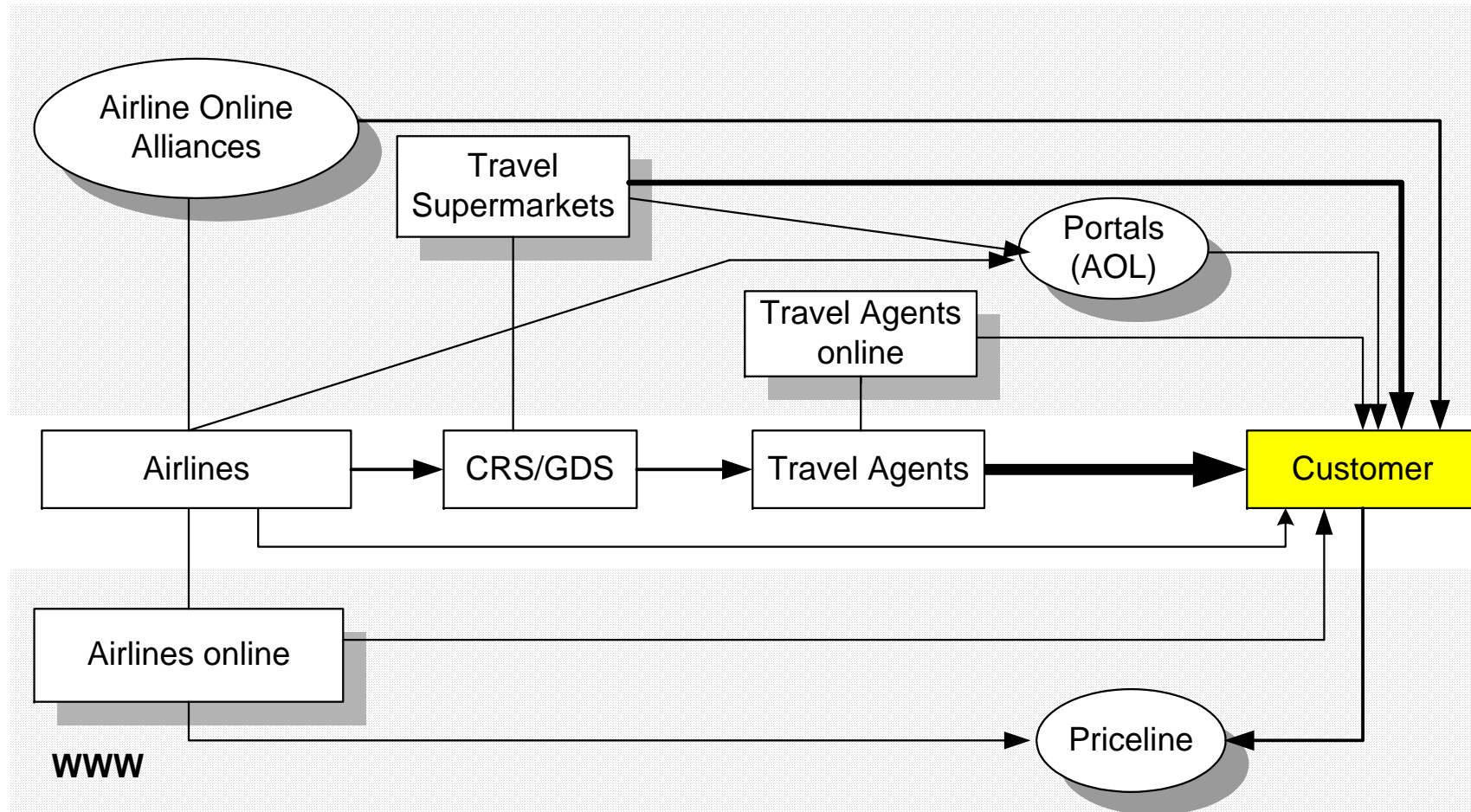
Will you rebook me automatically? No. We'll only change your flight or fare with your permission.

Is this service available for all airlines? Yes. The system checks all airlines in

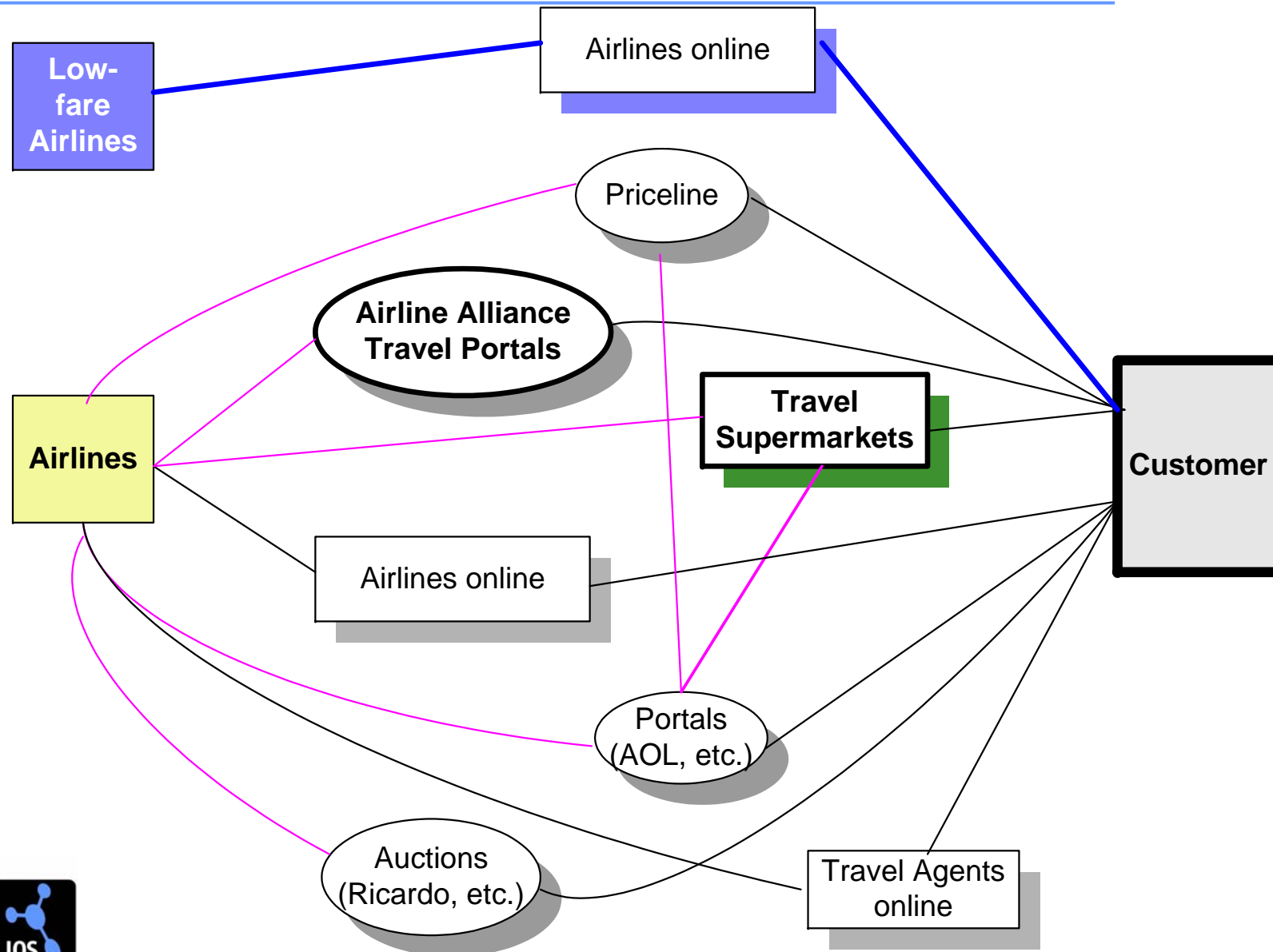
"Refunds for delayed flights"

Innovative compensation scheme for delayed flights on selected airlines. Hal Rosenbluth argues, he would rather invest in compensating travelers than in advertising.

A stylized description of the current situation



... another view



Winners and losers

- As the Web provides efficiency and market access small market segments for **specialized product & price offerings** have successfully emerged but appear to be restricted to niches.
- **Smaller airlines** with fairly simple low-cost offerings and price incentives for their clients to use their Online offering have successfully used the Web to leverage their market position.
- The **online travel supermarkets** have captured the biggest market share: one-stop-shopping sites with a broad assortment and efficient and versatile transaction support, integrating different business models such as online catalogs, demand collection and auctions.
- Many **travel agencies** are in severe danger of losing a critical part of their revenues which might become threatening for their existence. Despite still strong ticket sales, travel agents are striving to improve their efficiency and hence further consolidation in search of scale economies is likely.

Theory 1: Move-to-the-market debate

- **The proposition:** From electronic hierarchies to electronic markets!
... the result of reducing coordination costs without changing anything else should be an increase in the proportion of economic activity coordinated by markets." (Malone et al. 1988, 591)
- **The rebuttal:** Move to the middle!
"This hypothesis states that the lower cost and better monitoring capability of IT and the lower relationship specificity of IT investments will cause firms to engage in a greater degree of outsourcing; moreover, this increased outsourcing will be from a reduced set of suppliers with whom the firm has long-term cooperative relationships." (Clemons; Reddi 1993, 809)
- **The synthesis:** Mixed-mode hypothesis
"In essence, Information Systems enable organisations to do what they want much more efficiently and flexibly." (Holland; Lockett 1994, 409)

Cf. Chapter 4:
IT impact on governance structures

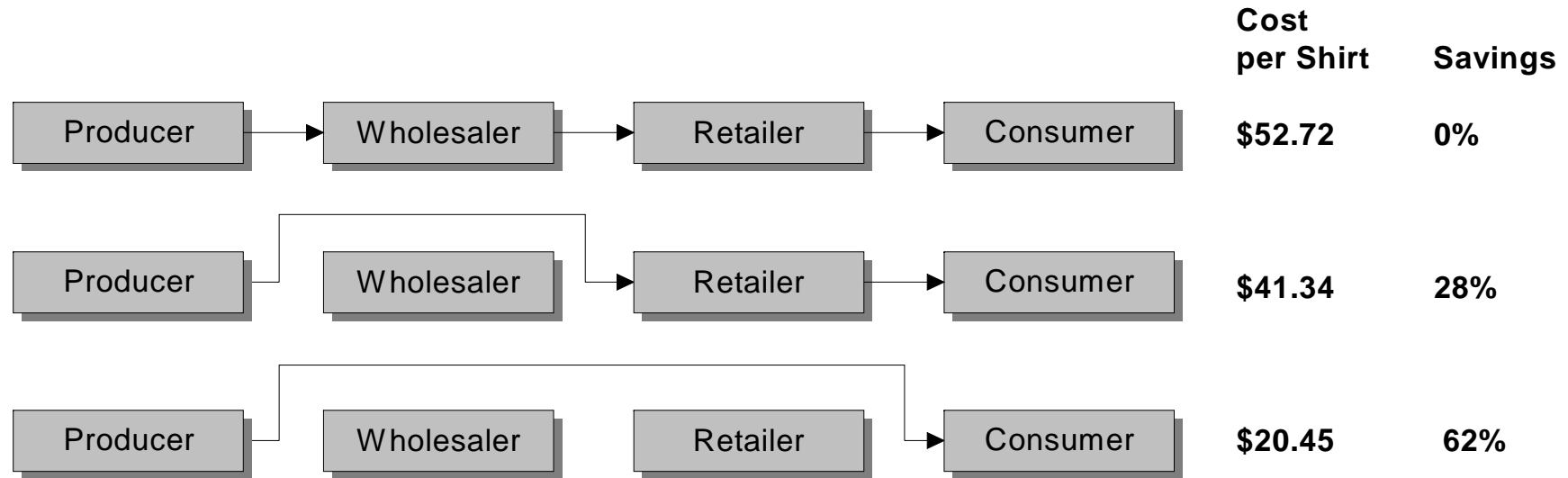
Theory 2: Disintermediation / Cybermediation debate

- **The proposition:** Disintermediation
Benjamin and Wigand (1995) have hypothesized effects of the proliferation of the Web on the restructuring and redistribution of profits among the stakeholders along value chains. Disintermediation is one of the main effects.
- **The rebuttal:** Cybermediation
Sarkar et al. (1995) argue that a number of factors in the emerging electronic marketplace have contributed to making intermediated transactions an attractive option. Cybermediaries can achieve cost advantages for intermediated transactions by negotiating favorable deals, bundling and pooling services on the supply side and demand on the other side.

Causes why suppliers reintegrate retail functions

- They can do it cheaper.
- They can do it better.
- They want more control.
- They have wanted it all along but what used to be too costly can now be achieved because of the Web.

Example: Value Chain in the Clothing Industry



	Producer	Wholsaler	Retailer	Consumer
Value Added	20.45	11.36	20.91	
Selling Price	20.45	31.81	52.72	52.72

Background: traditional retailers' functions

- Customer contact/ access
- Product information
- Advise, recommendations
- Selecting and evaluating suppliers and products
- Product configuration
- Repackaging (lot size)
- Covering space, i.e. logistics and distribution
- Covering time, i.e. warehousing
- Improving products
- Bridge financing

Source: Falk; Wolf 1992

Value adding functions of intermediaries

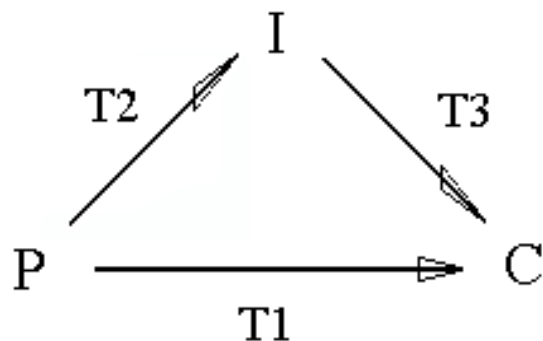
- **Search or information economies**

Intermediaries can facilitate knowledge and information to use and share, can match suppliers and customers, can enhance trust by providing trust-building measure, and can provide marketing information.

- **Exchange or allocation economies**

As the efficiency of transactions depends largely on transaction volume and predictability, intermediaries are pooling and buffering (supply and) demand.

Possible effects of the Internet on intermediaries



Transaction cost comparison

Direct sales (**P**roducer to **C**onsumer) vs.

Intermediated sales (**P** to **I** to **C**)

	T1 < T2 + T3 cost advantage direct sales	Pre-Internet	T1 > T2 + T3 advantage intermediated sale
T1' < T2' + T3'	Re-inforced direct sales Supplemented direct market and empowerment		Dis-intermediation Threatened Intermediaries
Post-Internet			
T1' > T2' + T3'	Extra-intermediation Cybermediaries		Re-intermediation Supplemented Intermediaries

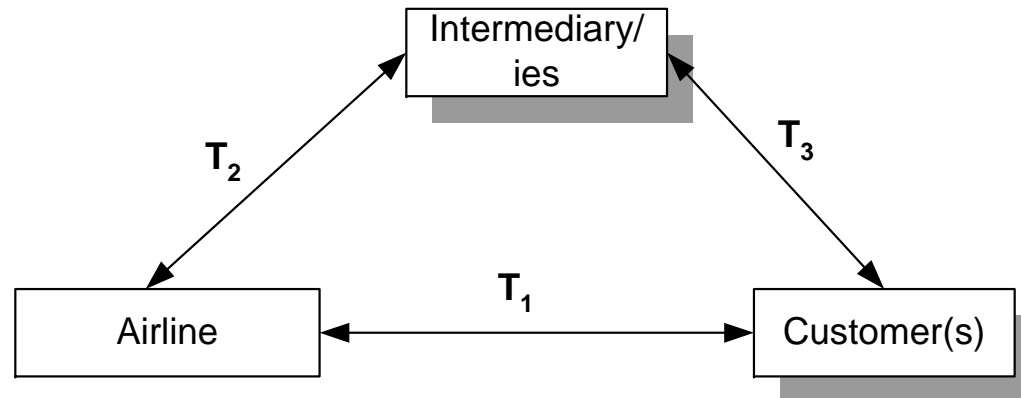
CyberMediaries: Intermediaries in Cyberspace

Examples:

- information filtering agents (that cater to specific info-needs)
- exchange brokers (that mediate transactions)
- transaction-risk reducers (credit rating services of commercial sites on the net akin to Better Business Bureaus)
- bias-reducers (evaluative services)
- traffic-directors (that influence the direction of net traffic)
- omni-media firms (that combine different media to enrich the buying process through the internet)
- fan club promoters (devoted to developing consumer loyalties and communities of users on the net)
- market research agencies (that report on site visits, proportion of conversions, competitive activities, and developments)

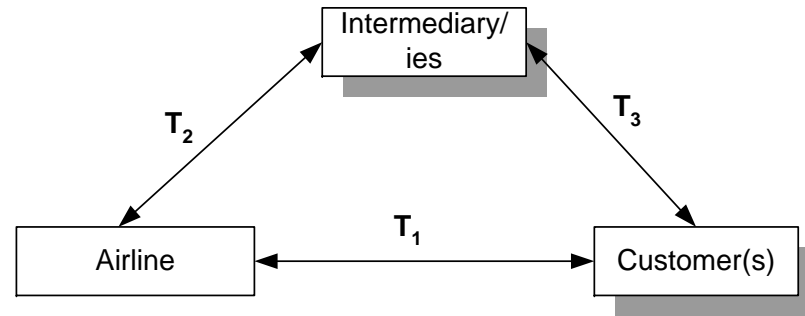
[Sarkar et al. 1995]

Cost drivers



T2	Coordination among supplier(s) and intermediary Cost drivers: division of labor, number of players
T1 / T3	Comparison of product price and value proposition, transaction cost (information asymmetries, uncertainty, frequency, asset specificity, risk of opportunism, execution cost) cost drivers: number of players, switching cost

Cost impact of ICT



- ICT is reducing information and coordination costs.
- (Ex ante and ex post) contracting costs and related risks may be higher.
- There is a plethora of intermediaries with varying roles and functions, leading in some cases to a comparison between apples and pears.
- The comparison is not sufficient on a one-by-one basis, but costs to be considered include economies of scale and scope.

Opportunities and risks

Customer	T1: value proposition, information cost of comparing different suppliers' offers, risk of lock-in effects T3: value proposition, e.g. unbiased comparison, choice
Inter- mediary	T2: number of suppliers, level of integration, volume discounts T3: number of customers, service level
Airline	T2: number of intermediaries T1: set-up and operational cost for direct sales, potential adverse reactions from distribution partners

Underlying trends in markets

The two debates highlight different aspects of a larger trend of market structure changes:

- ➔ the **first** is focusing on the **coordination mechanisms**,
- ➔ the **second** on the structure of the **supply chain** and interdependencies between the traditional and the electronic market space. Both use a transaction cost rationale.

Open issues

A number of open issues remain:

- Explaining the (ongoing) change dynamics.
- Understanding the (industry) contingencies affecting the changes.
- Grasping emerging models of interorganisational division of labor and (marketing, distribution and service) cooperation.

Theory 3: Making sense (interpretative approaches)

- **Beyond e-tailing – roles and linkages:** New models of division of labor and cooperation, changing structures of value systems/ business networks (e.g. value webs).
- **Contingencies:** Industry, product and transaction characteristics
- **Mixed-modes - best of several worlds:** Strategically designed combinations of traditional and online world, global and regional scope, market and hierarchy.
- **Theoretical challenges:** Concept of market.

Contingencies (1): channel characteristics

- supply-demand-ratio, fragmentation of supply, latent or fragmented demand,
- degree of market transparency,
- allocation inefficiencies,
- degree of regulation and regulation issues,
- degree of concentration,
- intensity of competition,
- value chain structure,
(established roles of intermediaries, role of suppliers)
- degree of price volatility and price discrimination.

Contingencies (2): product characteristics

- customer price sensitivity (price sensitivity vs. brand loyalty),
- product complexity and degree of standardisation,
- peculiarity (unique service offerings vs. commodities),
- degree of standardisation and exchangeability of products and services,
- possibilities and cost of bundling and configuration,
- (marginal) production cost, and
- perishability.

Contingencies (3): transaction characteristics

Transaction characteristics	Potential impact of intermediary
Information asymmetries	Reducing information asymmetries for customers and suppliers, facilitating supplier and customer matching
Uncertainty	Reducing uncertainty
Frequency	Increasing frequency of transactions for customers and suppliers
Asset specificity	Reducing asset specificity
Risk of opportunism	Reducing the risk of fraud as trustworthy third party
Confidence	Providing a secure platform guaranteeing privacy
Execution cost	Providing electronic payment, clearing and logistic services

Hypotheses

- H 1: When the *supplier market is monopolistic* or oligopolistic (i.e. a small number of suppliers dominate on product or price) and the *intermediaries are fragmented* and have limited control over consumer behaviour, then

- H 2: When *market or product knowledge* or augmentation is vital, then

Hypotheses

- H 3: When intermediaries have been *protected against intense competition* from outside the industry and the supplier market is fragmented or consumers have a preference for unbiased choice, then

- H 4: When *purchase decisions are complex* and varied, and the market is highly fragmented, then

Conclusions

- The Web facilitates a convergence of globally **dominant strategies** even across industries.
- The Web can be used and is used to **reduce price transparency** as the potential search space is rising fast with the number of potential vendors and the increasing degree of a multitude of price differentiation mechanisms undermines (automatic) price comparison mechanisms.
- The Web **drives concentration** despite the sketched emergence of a multitude of cybermediaries:
 - Small, innovative players can shake up established market structures and position themselves successfully in specialized market segments.
 - However, overall the Web has become a-few-winners-take-all game, favoring those players which can successfully draw the attention of the masses and leverage economies of scale and positive network externalities.

Conclusions (2)

- The Web has contributed to a **profound market transformation**, lowering the entry barriers of new players who often followed different rules than the incumbents.
- Early victories of new entrants have changed the playing field, but the **incumbents tend to fight back** and leverage their (financial) power, their brands, established relationships, and click and mortar strategies.

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