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Prashant Palvia
The University of North Carolina

Fergle D'Aubeterre
The University of North Carolina

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Prashant C. Palvia
Information Systems and Operations Management
Bryan School of Business and Economics
The University of North Carolina, Greensboro
Greensboro, NC 27402
pcpalvia@uncg.edu

Fergle D'Aubeterre
Information Systems and Operations Management
Bryan School of Business and Economics
The University of North Carolina, Greensboro
Greensboro, NC 27402
fjdaubet@uncg.edu

Shailendra C. Palvia
College of Management
Long Island University
C.W. Post Campus
Shailendra.Palvia@liu.edu

ABSTRACT

This paper provides a parsimonious research model for studying infomediaries roles in B2C E-Commerce, their level of integration and sophistication, and their impact on infomediary performance and customers' satisfaction. After an extensive literature review -- discovery, facilitation, and support roles were identified as the main roles that infomediaries perform in the B2C e-commerce arena. Based on an initial sample of 150 infomediaries from three industries namely automobile, retail, and travel, four hypotheses related to the research model were tested. The results suggest that infomediaries with high integration and sophistication level are found in the retail industry. In addition, the study reveals that not all infomediary roles exhibit the same level of integration and sophistication across the three selected industries.

Keywords

Infomediary Roles, Intermediation, Re-intermediation, Disintermediation, B2C e-Commerce

INTRODUCTION

Early researchers had predicted the downfall of traditional intermediaries as the opportunities provided for direct selling by the Internet growth. However, many examples now exist to refute the possibility of ever eliminating the middlemen (Wilder, 1997; Sakar et al., 1995; Giaglis et al., 2002; Palvia et al, 1999). In fact, new "infomediary" roles have emerged in B2B and B2C electronic marketplaces. Previous research has explained the phenomenon of infomediaries in the context of B2B e-commerce *(*Ordanini and Pol, 2001; Hagel and Rayport, 1997). However, there is paucity of research related to the role of *infomediaries* in the B2C e-commerce field. This study attempts to provide some explanations about the different infomediary roles in B2C e-commerce across three industries -- automobile, retail, and travel.

We posit that in the context of B2C eMarketplaces, intermediaries have evolved into *infomediaries* that add value to their stakeholders by deciphering complex product information and matching buyers' needs with sellers' products and/or services. According to Grover and Teng (2001, p. 79) infomediaries are "e-commerce companies leveraging the [power of] the Internet to unite buyers and suppliers in a single, efficient virtual marketspace to facilitate the consummation of a transaction"

Based on the marketing and e-commerce literature, we grouped the infomediary functions into three different roles. The first role is *Discovery*, which consists of the process of identification of buyers and sellers which meet each others' requirements. The second role is *Facilitation* of transactions to allow the flow of information and tangible goods and services between the buyers and sellers. The last role is the *Support* of knowledge intensive decision process that lead to deep collaborative relationships between e-marketplace participants. These three roles are used to determine the integration and sophistication level of infomediaries in B2C e-Commerce. Furthermore, we hypothesize that infomediaries with higher integration and sophistication level will attain higher performance and customer's satisfaction.

This paper is organized as follows. First, an overview of the literature related to eMarketplaces, infomediary, and infomediary functions in the context of B2C is provided. Second, the proposed research model and research hypotheses are crafted. Third, the statistical analysis of collected data is presented. Fourth, the implications of the results are presented. Finally, we present conclusions and suggestions for future research.

LITERATURE REVIEW AND ITS ANALYSIS

Electronic Marketplace and Infomediary

Electronic marketplaces are interorganizational information systems that facilitate the exchange of information about price and product offerings between buyers and sellers that participate in the marketplace (Bakos, 1991). Choudhary et al. (1998) identified the following examples of electronic marketplaces: airline reservation systems (CRSs) such as SABRE and APOLLO (Copeland and McKenney, 1988); American Gem Market System (HBS, 1988) in the precious stones industry; and TELCOT in the cotton industry (Lindseyetal, 1990). Recently, Amazon.com and eBay.com have become some of the most popular electronic marketplaces. Figure 1 depicts the structure of a typical electronic marketplace.

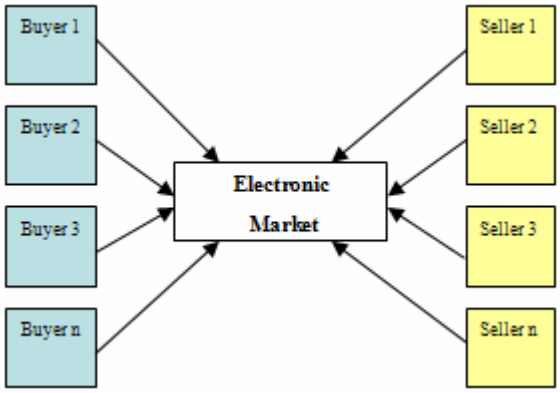

Figure 1. Electronic Market (Choudhary et al., 1998)

According to marketing literature, intermediaries are "organizations that support exchanges between producers and consumers, increasing the efficiency of the exchange process by aggregating transactions to create economies of scale and scope" (Sarkar et al., 1996). Bhattacharya and Hagerty (1989) recognize the role of intermediaries as "price setters," serving as regulators between buyers and sellers. It is clear that electronic marketplaces present challenges and opportunities to the role of intermediaries. Sakar et al., (1996) argue that electronic markets have given the opportunity for a new kind of intermediaries to emerge: “Cybermediaries”. Rayport and Sviokla (1994) identify a process where traditional industry players develop electronic commerce capabilities and start competing in electronic markets along with newer pure-play “cybermediaries”. Palvia et al (1999) describe several functions of intermediaries – which transcend from brick-and-mortar to click-and-portal marketing channels. Electronic markets may present new opportunities to traditional intermediaries to become re-intermediaries (Giaglis et al., 2002). Bailey and Bakos (1997) recognize the necessity for intermediation in eMarketplace. Based on an analysis of B2B and B2C e-Commerce among firms, they concluded that eMarketplaces continue to require provision of one-stop shopping, trust, information exchange and information filtering functions. The above conclusions by several authors contradict prediction by Malone et al. (1987) that intermediaries will be eliminated from the e-value chain calling it “disintermediation”.

Hagel and Rayport (1997, p.56) defined infomediary as “a business whose sole or main source of revenue derives from capturing consumer information and developing detailed profiles of individual customers for use by selected third-party vendors”. Moreover, Grover and Teng (2001, p. 79) stated that “infomediary is an emergent business model adopted by organizations in response to the enormous increase in the volume of information available and the critical role of information in enabling processes in electronic markets”. In addition they defined infomediary as “e-commerce companies leveraging the [power of] the Internet to unite buyers and suppliers in a single, efficient virtual marketspace to facilitate the consummation of a transaction”. We argue that *infomediaries* add value to their stakeholders by deciphering complex product information and matching buyers’ needs with sellers’ products and/or services.

Infomediary Roles

In the decentralized market coordination costs are higher than in the centralized market, because each buyer communicates with all possible suppliers. The infomediary role in the eMarketplace is to reduce the coordination costs and vulnerability costs of buyer and supplier organizations (Malone, 1987).

Three primary functions of a marketplace are to match buyers and sellers, facilitate transactions and provide an institutional infrastructure that allows for transactions to take place (Bakos, 1998). In addition, Choudhary et al. (1998) state that an

electronic market provides support for at least one of the following market-making functions: *identification* of potential trading partner, *selection* of prices and product offering information, and *execution* of the transaction per se.

Bailey and Bakos (1997) identify that the roles of market intermediaries are the following:

- *Aggregate:* intermediaries provide both buyer demand and seller ways to obtain economies of scale or scope (Demsetz, 1968; Resnick et al., 1995) and to reduce bargaining asymmetry (Williamson, 1975);
- Protect buyers and sellers from the opportunistic behavior of other participants in market by becoming an agent of *trust* (Williamson, 1975);
- *Facilitate* the market by reducing operating cost (Malone et al., 1987; Resnick et al., 1995); and
- *Match buyers and sellers (*Malone et al., 1987, Resnick et al., 1995*).*

Moreover, Grover and Teng (2001) explain that infomediaries perform the following roles:

- Search/complexity Services: infomediary helps buyers to understand complex product features
- Matching Services: infomediary enables the matching of buyers' needs with sellers' products and services.
- Content Service: infomediary provides additional relevant information about the products of services.
- Community Services: infomediary fosters long term relationships by adding value to buyers.
- Informational Services: infomediary use customers' profiles to match new product offers and potential demand.
- Privacy Protection Services: infomediary guarantees an environment where customer's privacy is protected.
- Infrastructure Services: infomediary provides a secure infrastructure and services for conducting transactions.

Recently, Singh et al. (2005) identify the critical roles of the infomediary-based as follows:

- *Discovery* consists of the process of identification of buyers and sellers which meet each others' requirements. Discovery encompasses search/complexity services and marching services previously identified by Grover and Teng (2001) and identification of potential trading partner identified by Choudhary et al. (1998);
- *Facilitation* of transactions to allow the flow of information and tangible goods and services between the buyers and sellers. This role was previously identified by Malone et al. (1987), Resnick et al. (1995), and Bakos, (1998); and
- *Support* of knowledge intensive decision process that lead to deep collaborative relationships between e-marketplace participants. This role is similar to the role of execution identified by Choudhary et al. (1998), and the role of infrastructure services identified by Grover and Teng (2001).

PROPOSED RESEARCH MODEL AND HYPOTHESES

From the above literature review, it is clear that infomediaries perform multiple roles. In order to develop a parsimonious research model that depicts the main roles of infomediaries, we posit that most of the functions performed by infomediaries can be classified as follows using the classification scheme of discovery, facilitation, and support categories:

- ***Discovery*** (Grover and Teng, 2001; Williamson, 1975; Singh et al., 2005)
  1. Search & Matching - Ability to find and retrieve specific products/services/information using typed words/category clicks provided.
  2. Spot Market Makers – Auction, bringing together buyer and seller (who may not be a formal business).
  3. Consumer Research – Gather data for use by others, i.e.: business, market research companies, registration/membership information.
  4. Neutral Evaluators/Regulators – Evaluate products/services unbiasedly, regulate and build trust.
  5. Advertising – Banners, displays and information about other products.
- ***Facilitation*** (Grover and Teng, 2001; Malone et al. 1987; Resnick et al., 1995; Bakos, 1998; Demsetz, 1968; Singh et al., 2005; Ordanini and Pol, 2001)*:*
  1. Customization – Personalization of site/products/services/information based on customer preferences and/or previous visit activities.
  2. Facilitation - Provide directory/portal services, virtual mall, provide e-commerce platforms for others.
  3. Expertise/Infomediary – Provide expert information. The ability to answer specific and unusual questions.
  4. Delivery – Channels/speed options, combining shipments for cheaper delivery.
  5. Aggregation –consolidate requirements from several customers in order to offer better price.

6. Bundling/Unbundling – Consolidate offerings from same/different businesses as a single deal or separate offerings based on membership/fee levels.

- ***Support*** (Grover and Teng, 2001; Singh et al., 2005; Bakos, 1998)*:*
  1. E-commerce capability - ability to provide transaction mechanism on the site Logistics/Tracking – Track your purchases, accounts and history.
  2. Financial services – financing, insurance, warranties available online.
  3. Community – Comments by other customers, chat, online discussion groups, newsletters.
  4. Customer Relations – Online/offline, web based/phone, 24/7 customer service.

The sophistication and integration level of an infomediary, a multidimensional construct, we posit, is the result of how well or bad the roles of discovery, facilitation, and support are performed. Based on marketing literature, it is clear that infomediaries assist the functions of customer service, marketing automation, and sales.It has been recognized that the use of IT applications to facilitate the delivery of services and products has a positive impact on the customer satisfaction (Karimi et al. 2001). We can state that the infomediary integration and sophistication level have a direct impact on the level of customer satisfaction. We also hypothesize that infomediary performancewill depend on the infomediary integration and sophistication level. Figure 2 depicts the research model.

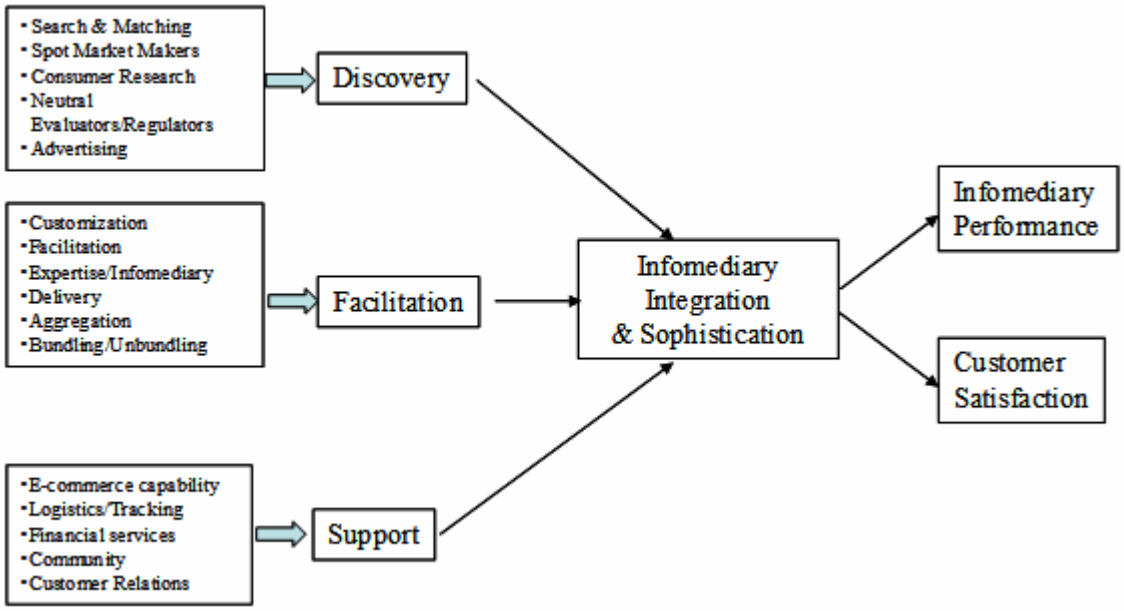

Figure 2. Proposed Research Framework

Research Hypotheses

Travel industry is perhaps one of the pioneers on conducting business electronically. For instance, since the introduction of SABRE, back in the 1960s, American Airlines has used electronic information about reservations in its marketing and sales efforts. In addition, the airline industry is recognized as a highly information intensive industry where information-based expertise and monitoring/influencing are critical factors (Christiaanse and Venkatraman, 2002). Based on the background of the travel industry, we are interested in testing hypothesis H1:

H1: *Infomediaries in the travel industry will exhibit the highest integration and sophistication level.*

Because the discovery role consists of the process of identification of potential buyers and sellers which meet each others' requirements (Grover and Teng, 2001; Choudhary et al., 1998), the discovery role exhibits high importance on any kind of industry. In fact, this is the primary function of any infomediary and it is needed to trigger the subsequent roles of facilitation and support. In this context, hypothesis H2 needs to be tested:

H2: *All industries will be associated with high level of discovery role.*

The infomediary facilitation role relates to providing means and transactions to allow the flow of information and tangible goods and services between the buyers and sellers (Malone et al., 1987; Resnick et al., 1995; Bakos, 1998). The travel industry is a highly information intensive industry (Christiaanse and Venkatraman, 2002) and their goods and services can easily be traded electronically. Similarly, digitizable goods and services (music, photographs, video, greeting cards etc.) offered in the retail industry can be easily traded electronically. However, in the automobile industry, buyers need to see, feel, touch and test drive. Thus, the infomediary *facilitation* role in the automobile industry adds little to no value for the buyers. Cap Gemini Ernst & Young (2001) found that the use of Internet to purchase cars represents about five percent of the total car sale. Furthermore, they found that although buyers preferred to use the Internet as a research tool, buyers still purchased their cars in the traditional way. Consequently, hypothesis H3 can be stated as follows:

H3*: In the travel and retail industry, the infomediary facilitation role will be higher than in the automobile industry.*

The infomediary support role aids knowledge intensive decision process that lead to deep collaborative relationships between e-marketplace participants (Choudhary et al. 1998; Grover and Teng, 2001). This role includes the functions of E-commerce capability, financial services, community, and customer relations. Once again, given that the products' characteristics, services offered, and customers needs vary across industries, we expect that in the travel and retail industries the infomediary *support* role will have a higher importance than in the automobile industry. The rationale behind this statement is that in the case of the automobile industry, customers will need to go to the dealer or seller in order to get the after sales services and/or warranty work done; on the other hand, in the case of the travel and retail industries, customers do not need to physically move to get the customer support that is needed. Therefore, we state the following hypothesis H4:

H4*: In the travel and retail industry, the infomediary support role will be will be higher than in the automobile industry.*

Infomediaries with high level of integration and sophistication will be able to efficiently reduce search costs, reduce the coordination costs and vulnerability costs of buyer and supplier organizations (Malone et al., 1987), and they will help to solve the problem of information overload (Grover and Teng, 2001). As a result, customers of infomediaries with these characteristics will be better off because they will get better deals and relevant information. In addition, recent research has shown that the use of infomediary and intelligent agents can lead to an increase in consumer welfare (Swaminathan, 2003) and decrease consumer cognitive stress (Singh et al., 2005). Therefore, we hypothesize H5 as follows:

H5*: Infomediary with high level of integration and sophistication will have high performance and high level of customer satisfaction.*

RESEARCH METHODOLOGY

Three industries – travel, automobile, and retail were chosen for the study. These industries were selected because most people are familiar with them. In fact, they were fairly popular among a surveyed group of frequent Internet shoppers. In addition, the travel industry is well known for being one of the first industries that started doing business on-line. In addition, since the retail industry includes infomediaries dealing with general merchandise (from CDs to appliances), it represents a broad segment of infomediaries. Finally, even though the automobile industry has slowly adopted the infomediary model, it represents a different type of infomediary in the market of durable goods. It is noteworthy to mention that cars are products that involve high economic and social risk and therefore they are less likely to be successfully sold online (Goldstuker et al., 2001). We believe that the selected industries cover both ends of the infomediary continuum.

For the purposes of this study, we will use both "bricks-and-clicks" infomediaries (who conduct business using both traditional and electronic methods) and "click-and-portal" infomediaries (who conduct business only on the Internet.)

An instrument was developed to evaluate the level of sophistication of the infomediary in each of the three functions – discovery, facilitation, and support. The instrument uses a Likert scale of 1 to 5, (5 represents the highest level of sophistication and integration in the function). A pilot test was conducted on a set of 10 websites in each selected industry. The final sample of 50 infomediary websites in each industry (obtained from searches using two search engines and lists of popular sites) was rated by two independent coders based on a set of definitions for each role and the type of indicators that would indicate the presence and sophistication of each function on the website. The two sets of ratings were tested for inter-coder reliability (Appendix A) and one set was used for the analysis.

DATA ANALYSIS

From the initial sample of 150 infomediary websites (50 in each industry), 6 were excluded from analysis because they did not fulfill all the infomediary roles and therefore were considered to be outliers. Number of infomediaries in the final sample were: 47, 48, and 49 respectively for the automobile, travel, and retail industries.

Table 1 shows the summary statistics of all industries, broken down by each infomediary role. Table 2 shows the summary statistics for each infomediary role within each industry and also in aggregation for the each industry.

Role	Mean	Standard Deviation
Discovery	2.251	0.567
Facilitation	2.181	0.519
Support	2.391	0.756

Table 1: Summary Statistics by Infomediary role

Industry Type	Role	Mean	Standard Deviation
Automobile	Discovery	2.643	0.542
	Facilitation	1.990	0.410
	Support	1.923	0.583
	Total	**2.173**	**0.420**
Retail	Discovery	2.217	0.560
	Facilitation	2.219	0.478
	Support	3.041	0.504
	Total	**2.480**	**0.405**
Travel	Discovery	1.910	0.314
	Facilitation	2.327	0.598
	Support	2.204	0.675
	Total	**2.160**	**0.451**

Table 2: Summary Statistics by Industry and Infomediary role

Using ANOVA tests, p-values were calculated to assess the proposed hypotheses. We used Least Square Distance (LSD) method to test the means differences. The level of significance for the analysis was set to $\alpha = 0.05$. Table 5 shows the results for ***H1:*** *Infomediaries in the travel industry will exhibit the highest integration and sophistication level.*

Industry Type Comparison	Difference Between Means	95% Confidence Intervals
Retail-Automobile	0.30239	0.12957 - 0.47520 ***
Retail - Travel	0.31710	0.14607 - 0.48812 ***
Automobile – Travel	0.01471	-0.15723 - 0.18665
Critical Value of t 1.9769 Comparisons significant at the 0.05 level are indicated by ***		

Table 3: Statistics Results for H1

Table 3 shows **statistically significant difference** between the mean level of integration and sophistication for the Retail versus Automobile industries and for the Retail versus Travel industries; but not for the Automobile versus Travel industries.

It is important to note that these results are similar regardless the adjustment method used -Tukey's Studentized range test or Least Squared Different (LSD). In order to further test H1, a t-test was performed and we found that the data supported the hypothesis that *the mean level of infomediaries' integration and sophistication for the Retail industry is greater than the mean level of integration and sophistication for the Travel Industry (p-value =0.0002, 95% C.I.: 0.14-0.49).* To sum up, the results show that H1 is not supported by the data. However, it is worthwhile to note that infomediaries in the retail industry have a greater level of integration and sophistication than infomediaries in the travel Industry and that there is not statistically significant difference between the level of infomediaries' integration and sophistication in the travel and automobile industries.

We conducted six individual t-tests to test ***H2:*** *All industries will be associated with high level of discovery role.*

Industry	Mean Comparison	Results
Automobile	Discovery - Facilitation	Critical value of t= 8.860 p-value <.0001
	Discovery - Support	Critical value of t= 7.941 p-value <.0001
Retail	Discovery - Facilitation	Critical value of t= -.025 p-value = 0.51
	Discovery - . Support	Critical value of t= -8.5 P-value ≈ 1
Travel	Discovery - Facilitation	Critical value of t= -5.368 P-value ≈ 1
	Discovery - Support	Critical value of t= -3.199 P-value ≈ 0.99

Table 4: Test Results for H2

Table 4 shows the statistical results for H2. The infomediary *Discovery* role has a higher value than those for the other two roles only for the automobile industry. Therefore, H2 is supported only for the automotive industry, and not for the retail and travel industries.

For ***H3:*** *In the travel and retail industry, the infomediary facilitation role will be higher than in the automobile industry,*

We used the ANOVA test and LSD method to test means differences for the infomediary *facilitation* role across industries.

Industry Type Comparison for the Infomediary Facilitation role	Different Between Means	95% Confidence Intervals
Retail-Automobile	0.229	0.0254 - 0.4333 ***
Travel-Automobile	0.337	0.1342 - 0.5401 ***
Critical Value of t 1.9769 Comparisons significant at the 0.05 level are indicated by ***		

Table 5: Statistics Results for H3

Table 5 shows the results for *H3.* There is statistically significant difference between the mean level of the *facilitation* role for the Retail and Automobile industries and also between the Travel and Automobile industries. Table 6 shows the results for the t-test for H3.

Mean Comparison	Results
(Automobile- Retail) Facilitation Mean	Critical value of t= -2.508 p-value=0.0069; 95% C.I.: -0.41;-0.05.
(Automobile- Travel) Facilitation Mean	Critical value of t= -3.208 p-value = 0.0009; 95% C.I: -0.55; -0.13.

Table 6: Test Results for H3

The data support the hypothesis at a p-value of 0.0069 and at a p-value of 0.0009 respectively that the mean level for the infomediary *facilitation* role is higher in the retail and travel industry as compared to the automobile industry.

For ***H4:*** *In the travel and retail industry, the infomediary support role will be will be higher than in the automobile industry*, we used the ANOVA test and LSD method to test means differences for the infomediary *support* role across industries.

Industry Type Comparison for the Infomediary Support role	**Different Between Means**	**95% Confidence Intervals**
Retail-Automobile	1.1183	0.8780-1.3585***
Travel-Automobile	0.2807	0.0417-0.5197***
Critical Value of t 1.9769 Comparisons significant at the 0.05 level are indicated by ***		

Table 7: Statistics results for H4

Table 7 shows the results for *H4.* There is statistically significant differences between the mean level of the infomediary *support* role for the travel and automobile industries and also for the retail and automobile industries. Table 8 shows the results of t-test for H4.

Mean Comparison	**Results**
Automobile- Infomediary *Support* role mean vs. Retail- Infomediary *Support* role mean	Critical value of t= -10.010 p-value<0.0001; 95% C.I.: -0.41;-0.05.
Automobile- Infomediary *Support* role mean vs. Travel- Infomediary *Support* role mean	Critical value of t= -2.176 p-value = 0.0160; 95% C.I: -1.34; -0.90.

Table 8: Test Results for H4

As can be seen in table 10, the data support the hypothesis (p-value= 0.016) that the mean level for the infomediary *support* role is higher in the travel industry than in the automobile industry, and the data support the hypothesis (p-value <0.0001) that the mean level for the infomediary *support* role is higher in the retail industry than in the automobile industry. In general, the data support *H4*.

DISCUSSION

In existing literature, we identified sixteen different functions that are executed by infomediaries. This multiplicity of functions makes it difficult to evaluate the infomediaries' performance and to decide what functions are critical for infomediaries to fulfill. We were able to group these functions into three main roles namely *discovery*, *support*, and *facilitation.* The proposed taxonomy was successfully used to determine the level of integration and sophistication of 144 infomediaries from three different industries. Designers and developers of e-Commerce need to ensure that infomediaries fulfill these three roles. In addition, managers need to allocate adequate resources toward the design of technical platforms that allow infomediaries to successfully perform such roles to achieve a higher level of integration and sophistication.

Contrary to expectation, infomediaries of travel industry do not exhibit the highest level of integration and sophistication. In contrast, the infomediaries in the retail industry exhibit the highest level of integration and sophistication. This phenomenon could be explained by the differences in the level of competition that exists in the travel and retail industries. The travel industry is dominated by some big players such as Sabre Travelocity, Microsoft Expedia, and Orbitz.com, while in the retail industry there are no clear dominant players. The lack of competition in the travel industry makes infomediaries to be reactive to the market instead of being proactive. On the other hand, infomediaries on the retail market need to be proactive to keep up with the many competitors.

The most noticeable feature of the retail industry, according to our sample, is the high prevalence and extensive sophistication of the search and matching function within the *discovery* role and the e-commerce capability within the *support* role. The delivery, customer relations and logistics//tracking functions within the *facilitation* role also rate highly across the retail industry. It is important to mention that, in terms of the bundling and unbundling function of the *facilitation* role, the travel industry is significantly more sophisticated than the other two industries. This is due to the fact that there is

more scope in the retail industry to put together different products in combinations that might be attractive to various segments of consumers. This one-stop-shopping feature would have a positive impact on the travel industry's profitability (Jarach, 2002).

An important contribution of this study is related to the relationship that seems to exist between the infomediary role and industry type. Our results suggest that each industry type exhibits different levels of sophistication and integration for the infomediary roles. We found that for the automobile industry the role with the highest level is the *discovery*, for the retail industry it is the *support* role, and for the travel industry it is the *facilitation* role. Some plausible explanations for this phenomenon are the characteristics of the products themselves, and the customers' needs and expectations in regard to each industry. For instance, in the automobile industry, buyers mainly use infomediaries to search for prices and to find information about cars-renting and dealers' locations, and not for making the purchase itself. This agrees with existing literature that states that goods that involve high economic and social risk, like cars, are less likely to be sold successfully online (Goldstuker et al., 2001). Alternatively, less tangible product, such as books, CDs, clothing, and services are more likely to be sold electronically (Valdani, 2000). In addition, this result agrees with Grover and Teng (2001) infomediary value grid. They explain that automobiles are in the High-High region of the value grid and that such products reflect high acquisition costs and require extensive search; whereas, CDs, books, and etc. are in the High-Low region of the grid since such products have low acquisition costs and require support on the requirements and sales fulfillment.

Finally, the results suggest that infomediaries in the travel and retail industry exhibit higher level of integration and sophistication for the roles of *facilitation* and *support* than the infomediaries in the automobile industry. These findings are supported by the fact that infomediaries in the retail and travel industry are more mature than the ones in the automobile industry. Such findings have important implications for the practitioners in the automobile industry. In this regard, designers and developers can improve the level of integration and sophistication of infomediaries in the automobile industry by adding to the infomediaries features like financial services, customer relations, bundling and unbundling of services, and customization.

FUTURE RESEARCH AND CONCLUSIONS

Hypothesis *H5: Infomediary with high level of integration and sophistication will have high performance and high level of customer satisfaction* could not be tested. We were not able to gather the precise information about the level of customer satisfaction and infomediary performance to measure the impact of the infomediary integration and sophistication level on the performance and level of customer satisfaction. In order to test H5 researchers could select a group of infomediaries that exhibit low, middle, and high level of integration and sophistication level to perform multiple case studies that allows research to assess the relationship that exists between infomediary performance, customer satisfaction, and level of integration and sophistication.

Another research to be explored is related to the level of buyers' trustworthiness toward infomediaries. Despite the anticipated benefits, in the past few years, eMarketplaces have experienced a roller coaster ride. Several e-markets have failed in spite of the tremendous prospects for growth predicted by reputed research groups including the Gartner Group, Forrester, and e-Marketer.com. A survey by Davenport et. al., (2001) on B2B eMarketplaces identified lack of trust as a primary barrier for eMarketplace growth. This lack of trust is essentially due to poor real time information about trading partners, such as collective feedback from multiple companies, third-party approvals and availability of product information. Therefore, we need to understand what variety of features infomediaries needs to offer in order to capture buyers' credibility.

The contributions of this paper are two-fold. **First**, this paper contributes towards building a theory of infomediary by providing a parsimonious framework that assists in the study of infomediaries roles in B2C E-Commerce, their level of integration and sophistication, and their impact on infomediary performance and customers' satisfaction. The research model is well grounded and was empirically tested using a sample of 144 infomediaries from three industries - automobile, retail, and travel. **Second**, the findings suggest that not all infomediary roles exhibit the same level of integration and sophistication across the three industries and that infomediaries with high integration and sophistication level are found in the retail industry. These findings have important implications for B2C E-commerce designers and managers because by knowing that the roles of infomediary vary across industries, they would be able to develop and tailor better web-sites that will lead to higher level of customers' satisfaction.

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Appendix A

Inter Coder Reliability Statistics

The inter coder reliability for the entire sample is 89.33%

Rated Intermediary Functions	Travel	Auto	Retail
Search & Matching	88%	90%	85%
Customization	86%	92%	90%
Facilitation	70%	92%	92%
Expertise / Infomediation	70%	85%	92%
Bundling / Unbundling	80%	94%	94%
Ecommerce provision	82%	94%	96%
Financial Services	92%	92%	92%
Delivery	82%	92%	83%
Advertising	78%	88%	92%
Logistics/Tracking	86%	92%	96%
Community	90%	90%	92%
Aggregation	94%	96%	96%
Spot Market Makers	96%	92%	96%
Neutral Evaluators / Regulators	96%	94%	94%
Customer Relations	86%	90%	88%
Consumer Research	94%	85%	88%
Overall Reliability by Industry	**86%**	**91%**	**91%**