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Do We Need Intermediaries in E-Government? Intermediaries to Create a Demand-Driven Government

Marijn Janssen
Delft University of Technology, m.f.w.h.a.janssen@tudelft.nl

Bram Klievink
Delft University of Technology, a.j.klievink@tudelft.nl

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Marijn Janssen
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ABSTRACT

The advent of e-government and the use of the Internet to connect governments to citizens and businesses have resulted into direct contact among government agencies and their customers. The development towards more direct interaction can be used to predict the bypassing of intermediaries. In this paper three case studies are analyzed which counter this argument. A reintermediation strategy is followed in which intermediaries are used as new distribution channels to interact with customers. The case studies show that intermediaries can be employed to reduce cost and at the same time make government more demand-driven. Following only a disintermediation strategy, often motivated by transaction cost, is a too narrow approach and needs to be complimented by reintermediation strategy to advance towards a demand-driven government.

Keywords (Required)

E-government, intermediation, reintermediation, channels, demand-driven government, transaction costs

INTRODUCTION

Advances in ICT are widely acknowledged as causing fundamental changes in network structures (Clemons et al. 1992; Malone et al. 1987). The nature of government functioning has experienced a rapid transformation since the latter part of the 1990s (Devadoss et al. 2002). Governments are seeking to improve their service provisioning and are looking for redesigning the channels they use to interact and provide information to their citizens and customers. The use of innovative channels have the potential to improve access to groups of citizens and business segments out-of-reach of current channels (Janssen et al. 2008). Organizational website(s), telephone, mail and front-desk are the obvious channels employed by government organizations. Government organizations can create their own channels, but can also use other channels to interact with their clients. Those channels can go beyond the agency's boundaries. Traditionally, in the Netherlands municipalities provide such form of intermediation for other agencies like the Social Security and the Inland Revenue Service. Municipalities have a collection of products and services that can be executed and provided on behalf of other organizations. In this way municipalities are a kind of channel that is used by many other governmental agencies to provide their services. By using the Internet, it has become possible to directly connect to citizens and businesses without needing expensive front-desks or other expensive channels. Creating an online presence including transaction and interaction features is facilitated by many software packages.

As a consequence of technology advances, it is easy to directly connect to clients. This might ease the process of interacting with the citizens and businesses, as no complicated agreements and activities of middlemen are necessary. *Disintermediation* is the removal of intermediaries in the channel management by cutting out the middleman. The argument for disintermediation is often found in the lowering the transaction costs (Malone et al. 1987). Transaction costs appear due to friction in the interactions among parties. ICT lowers the transaction costs and in this way enables direct interactions. For example, the use of the Internet has less transaction costs than a visit to the front desk, as no traveling and waiting in the office is necessary. The basic idea is that by disintermediation direct interaction between the providing party and the service requester becomes possible at lower costs. Unnecessary activities are eliminated and removed.

The disintermediation view is challenged because the focus on costs underestimates the range of facilitating services offered by intermediaries (Janssen et al. 2000; Sarkar et al. 1995). New intermediaries might arrive that provide value adding activities. This phenomenon can be labeled as reintermediation. The discussion of disintermediation and reintermediation strategies becomes more important in the view of demand-driven government and both strategies might have their merits. This research contributes to the debate about the removal or use of intermediaries. The *aim* of this paper is to investigate the potential of reintermediation in e-government. This research should support government agencies to develop a better intermediation, disintermediation and reintermediation strategy. We will first present theories concerning intermediation, disintermediation and reintermediation in the next section. Thereafter our research approach is discussed and three case

studies are presented. In the next section, we compare the case studies, discuss our main findings and provide recommendation for future research. Finally, we draw conclusions.

LITERATURE BACKGROUND

Advances in ICT influences the interactions among parties and are causing fundamental changes in network structures (Clemons et al. 1992; Malone et al. 1987). The costs of interacting among parties are named transaction costs. The transaction cost theory has been used to predict that advances in use of ICT would reduce transaction costs and in this way enabling organizations to connect directly to each other (Gellman 1996; Malone et al. 1987). "Transaction costs result from the transfer of property rights between parties and exist because of friction in economic systems" (Coase 1937; Williamson 1975). Malone, Yates and Benjamin (1987) use transaction cost theory as the theoretical background for the electronic markets hypothesis and the bypassing of intermediaries resulting in disintermediation. The Electronic Market Hypothesis is the hypothesis of Malone et al. that by reducing the costs of coordination, information and communication technology will support an overall shift toward a proportionally increased use of markets over hierarchies to coordinate economic activity. Malone, Yates & Benjamin argue that one of the effects of using electronic networks will be the bypassing of intermediaries in electronic markets due to lower transaction costs.

The disintermediation argument focuses only on the cost of intermediation and in this way takes a too narrow view. Sarkar, Butler and Steinfeld (1995) found that the predictions about the disappearance of intermediaries made assumptions about the relative transaction costs to the producer that might not be warranted and also found that the range of facilitating services offered by intermediaries was underestimated. Furthermore the disintermediation argument does not take into account the benefits that can be gained by using intermediaries (Giaglis et al. 2002; Janssen et al. 2000). This implies a need for better understanding how intermediary channels are used to interact with customers. Intermediation, disintermediation and reintermediation strategies are dependent on the life cycle of an industry, and the strategies, resources and the assets of players (Chircu et al. 1999). As a result, in-depth research . Figure 1 shows these patterns schematically. To the left a reintermediation cycle is necessary in the roles of intermediaries and we will investigate three case studies in this paper.

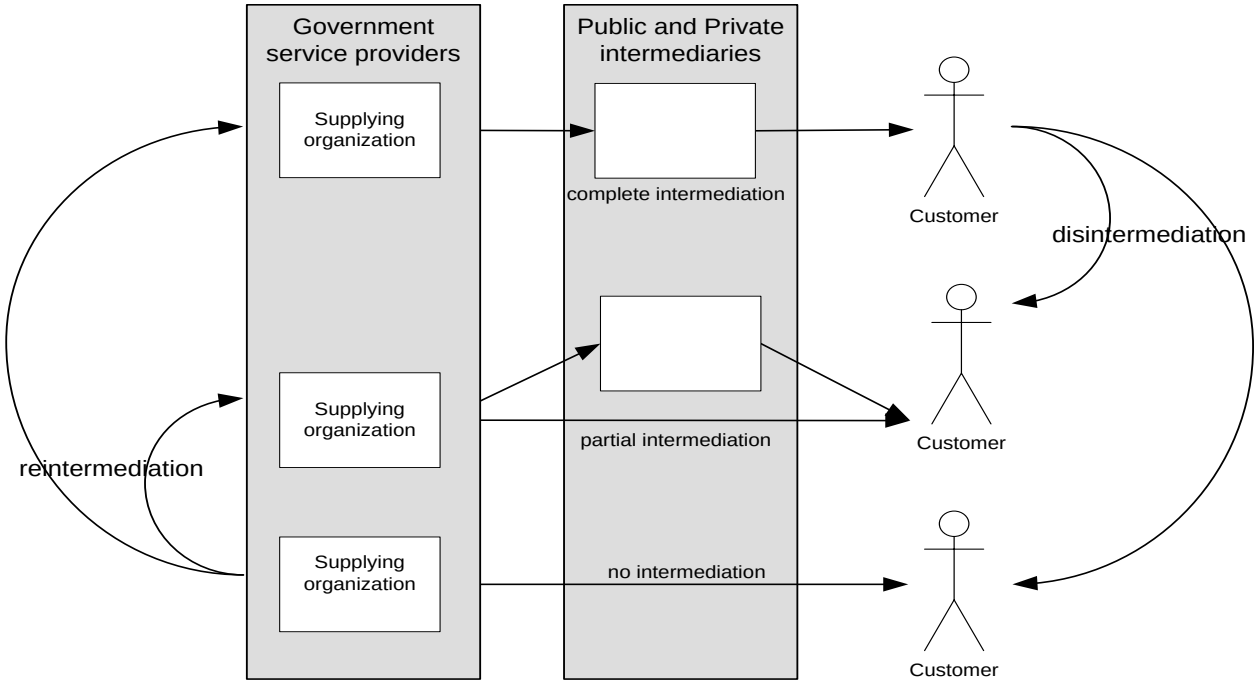

Figure 1: Intermediation, disintermediation and reintermediation (based on Chircu et al. 2000)

Although government agencies are in principle able to connect directly, the use of intermediaries might provide value which is sometimes difficult to determine in advance and it is necessary to understand the phenomenon of intermediaries better. In e-commerce, this has resulted in the identification of recurring pattern of intermediation, disintermediation, and reintermediation through an IDR framework (Chircu et al. 2000). Figure 1 shows these patterns schematically. Intermediation is the situation

shown at the top of the figure. On the right hand the disintermediation cycle is shown, as traditional channels are abandoned in favor of direct service provisioning. On the left side of third figure a reintermediation cycle is shown, as new intermediaries appear that can be used as channels to interact with the customers.

Intermediaries are aimed at bridging the gap between the service providers' offers and the service requesters' wishes and requirements. Traditionally, the concept of electronic intermediaries refers to phenomena such as portals, which is necessary for integrated services provision in the front office. In contrast, current types of electronic intermediaries focus on providing facilities for, or supporting the coordination with citizens or businesses, which is less visible. There is not good definition of an intermediary and the literature suggests that almost any entity on the Internet may count as an intermediary from some point of view (Bailey et al. 1997; Resnick et al. 1995; Sarkar et al. 1995; Spulber 1996). Our approach to intermediary is that it is any public or private organization that facilitates the interaction with customers, i.e. citizens or businesses.

Intermediaries provide many functions and roles that cannot be easily replaced, substituted or internalized through direct interactions. Four roles of intermediaries are identified by Bailey and Bakos (1997). The main roles are (Bailey et al. 1997; Janssen et al. 2000):

- *Matching demand and supply*. The matching of demand and supply concerns the matching of a consumer's need with the services provided by the service providers. The implicit sourcing question refers to who will provide which part of the total service;
- *Information aggregation*. Information aggregation is acquiring, processing and distribution of information. This includes information to monitor and control the execution;
- *Providing trust*. Providing trust is aimed at ensuring the information quality, the timely performance of activities and ensuring the accountability of decisions and decision-making processes;
- *Facilitating, by providing the institutional infrastructure*. The institutional infrastructure concerns the providing of functionality that is used by multiple agencies in the PSN.

These roles will be used to analyze our case studies in the remainder part of this paper.

RESEARCH APPROACH

Due to the complex nature of these types of arrangements and the need to gain a deep understanding of the phenomenon, a qualitative approach based on case study research was adopted for this research (Yin 1989). Case study research is one of the most common qualitative method used in Information Systems (IS) (Orlikowski et al. 2001). Three different types of case studies were investigated which were selected based on their reputation in the field, including the Vehicle Licensing and Administration Agency (in Dutch abbreviated as RDW) and Dutch Inland Revenue Service (IRS). The main reason for selecting these cases was that these are viewed as a good example of re-configuring a service channel by reintermediation (Undheim et al. 2007). In addition, a municipality was selected that had a reputation of being innovative and demand-driven.

This research was based primarily on document collection, content analysis and interviews with key representatives. At the municipality three interviews were conducted and at the RDW and IRS two interviews were conducted. Both public available and internal documents relating to the history, current use of intermediaries and development were gathered and examined in order to acquire a good understanding of the operational, technical, management and organizational aspects. Public available documents provide a good overview of the problems and motives for changes. Internal documents contained information concerning the transformation, design choices and accomplished benefits.

CASE STUDIES BACKGROUND

The *Dutch vehicle administration and licensing agency* takes care of the vehicle administration of all cars and tracks in the Netherlands. They have a register of cars and trucks that is used for the supervision of the vehicles on the roads and to monitor technical safety and to collect the required taxes. The post office was used as the channel to transfer the car ownership between individuals. Employees at the post office check the identity of the persons, ensure that the forms are filled in correctly and ensures that the form arrives at the RDW in a secure and safe way. With the rise of the internet, it would be logical to pursue a disintermediation strategy and would start interacting directly. The notification of change in car ownership via the Post Office took often 6 or 7 days. In addition, a majority of the registration fee had to be paid to the Post Office for checking the information and delivering it to the RDW as schematically shown in the figure below.

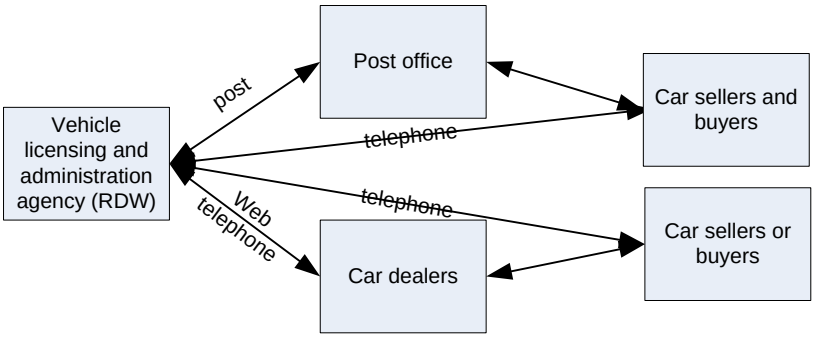

Figure 2: Intermediation in the vehicle administration

Instead of only choosing for the disintermediation of links like the post office, RDW choose to reintermediate. The RDW took a multi-channel approach; telephone inquiries are still supported and the post office is used to transfer car ownership between individuals (without the intermediation of a car dealer) as shown in Figure 3. In addition, the car dealers were supported by providing them the possibility to directly register a change car ownership with the RDW. The motivation of this new channel is that there are a limited number of car dealers, that are checked incidentally and fraudulent car dealers will lose their license. The car dealer already was an intermediary in the process of buying and selling cars and became an intermediary between car sellers/buyers and the RDW. In this way, ownership can be transferred instantly and ideally the sellers and buyers of cars are not aware of the involved of the vehicle licensing and administration agency.

The *municipality* under study is a medium-sized municipality in the Netherlands which is well known for it innovative capabilities. It was one of the first municipalities introducing a contact center for their citizens and businesses. In addition, the municipality has been re-organized to become more demand-driven. The strategy in the past was to create a website with recurring users. Information was frequently updated and made attractive for citizens and the hope was to create an online community. Despite these attempts and spending resources, the municipality was not able to retain visitors. Citizens and businesses only visited the municipality web pages when they were in need for a certain permit of service from the municipality. Politicians and public managers were wondering why several private communities within their geographical boundaries were successful while their own community failed. After this initial attempt it was decided not to spend any resources anymore on creating a community, instead it was decided to use the existing private community to interact with their citizens. Agreements were made with this community and now the municipality is using this community to provide information to their citizens, to ask citizens their opinions about new policies, and also links to products and services provided by the municipalities are included. This is schematically visualized in Figure 3 In this way a new channel is created that is closer to the citizens and attracts more visitors than their own website. In addition, they do not bear the cost of running a community, updating content and making the community attractive for their citizens anymore.

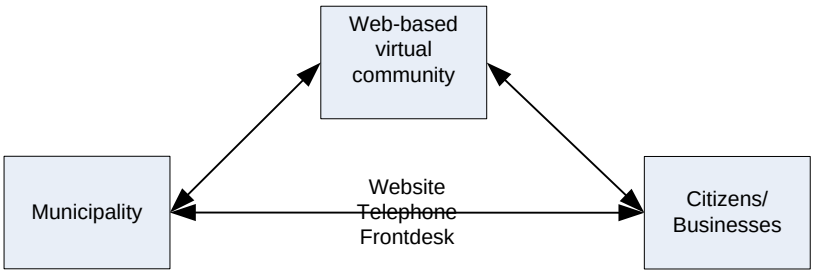

Figure 3: Intermediation by the municipality

The *Dutch Inland Revenue Service* (IRS) has been actively involved in electronic service delivery for decades and one of its main objectives is making tax filing for citizens and businesses easier (IRS 2004). From January 2005 onwards, all businesses have the legal obligation of filing their tax forms electronically. The IRS provides various ways of interacting and has developed a software program that can be used by businesses and citizens for filling in the information and submitting it. Over the last years they started to interact closely with software vendors of financial software. Business rules for tax filing were developed by the IRS that can be used by software vendors for deriving the tax information out of their applications and

submitting it to the IRS in eXtensible Business Reporting Language (XBRL) format. The software vendors play a major role in the discussions about the implementation of new policies and regulations.

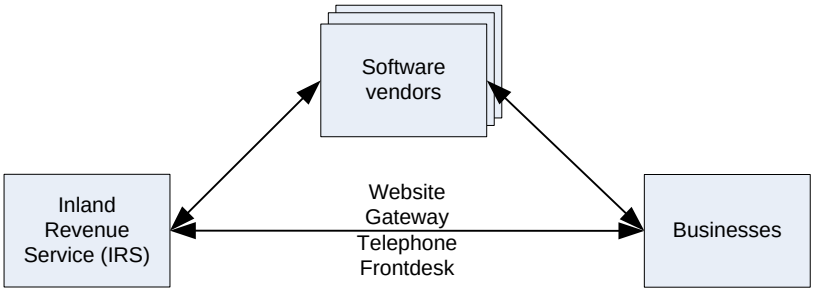

Figure 4: Intermediation by the IRS

FINDINGS AND DISCUSSION

This paper is aimed at contributing to the discussion of re- and disintermediation. In the case study we found strategies for the disintermediation of channels but also for the subsequent reintermediation. Table 1 provides an overview of the three case studies by describing the past, the main drivers, the reintermediation strategy and a short description of the reintermediation roles.

Case study name	**Vehicle administration**	**Municipality**	**Inland Revenue Service**
Past	Post office intermediates interactions between users and vehicle administration.	Use the website, telephone and front-desk to contact to citizens.	Use the website, telephone and front-desk to contact to citizens.
Main driver	Improve supervision of the vehicles on the roads in the Netherlands to monitor technical safety and to collect the required taxes. Reduce the interaction costs.	Increase number of citizens that are targeted with the Internet and stay closer to the citizens.	Standardize and unify formats for tax filing, Improve customer-orientation and reduce tax administration costs.
Reintermediation strategy	The post office is still used to transfer car ownership between individuals (without the intermediation of a car dealer). The car dealers are used to transfer care ownership when buying or selling a care.	Use of online community of recurring users to enabling interaction and service provision.	Support vendors of financial software to include tax rules in their software. In this way businesses can use this software to automatically submit their tax information.
Intermediation roles	Facilitating role: The car dealers facilitate the process of the transfer of the car ownership and in this way hide the interaction with this agency Trusted role for the identification and transfer of ownership Matching role: - Information aggregation: -	Facilitating role: facilitate interaction with citizens (discussions forum) Trusted role: image and correct data Matching role: - Information aggregation: provide information	Facilitating role: facilitate collection of tax data Trusted role: ensure data is correct Matching role: - Information aggregation: aggregates financial information in the correct format.

Table 1 Overview of the case studies

In the three case studies the roles of the intermediaries seem to be completely different. The RDW uses the car dealers for transferring ownership and the focus is on the facilitating and trusted roles. The municipality uses the privately owned online community to stay closer to their citizens and in this way facilitate better interaction and information provisioning. The focus

is on the information aggregation and facilitation roles. Nevertheless, the image of the municipalities and trust of citizens in the municipality is dependent on the online community, and the municipality is dependent on receiving the correct information in time. As a result the trusted is also important. The IRS uses the software vendors as a vehicle to obtain tax information directly form the financial information stored in the systems already in use by the companies. In this way it facilitates the collecting of information and aggregates the information the correct format.

Not surprisingly, the three case studies show that the matching role is not used by any of them. The information aggregation played a minor role in the municipality and IRS case studies, as the intermediaries were used to collect and/or distribute information. The intermediaries are especially used to facilitate the information exchange with citizens and businesses and less for information aggregation purposes. The intermediaries are especially used to remain closer to the citizens or businesses and should facilitate these interactions. In this way the cost of interacting between citizens/business and the government are reduced for both. The reintermediation strategy is a way to become more demand driven and reduce the cost at the same time. Also the trusted role is of importance in all three case studies. The government agencies depend on the reliability and accuracy of the information on the intermediaries. Furthermore, the image of and trust in government is dependent on the quality of the intermediaries. In all three case studies the making of clear agreements and contracts and occasionally checking the performance of the intermediary is viewed as a key role.

In the literature is was argued that the services (Sarkar et al. 1995) and added value (Giaglis et al. 2002; Janssen et al. 2000) of intermediaries should be analyzed. Our case studies show that the services and added values are interrelated concepts, as services are used to create added value by improving service provisioning or by reducing costs. Intermediaries might be closer to the customers in this way facilitating improved service provisioning. In addition by providing more service than from a single governmental organization the cost might be reduced by profiting from economies of scale. Since the intermediaries have a close relationship with the clients, the use of intermediaries supports demand-driven government and match the chain of service delivery to the client chain.

The use of intermediate organizations in the interaction channels cannot be easily substituted or internalized through direct interactions. Governmental organizations might pursue a variety of strategies to employ their channels. From the government's perspective, channels have different characteristics and might be employed for different purposes. This result in the proposition that a close relationship with customers requires the use of intermediaries in the interacting channels. Governments might pursue a strategy in which all kinds of intermediaries will be used to interact with their citizens and businesses. This add to the idea that the government becomes less visible and uses other parties to provide services. This proposition should be subject to further research and research is necessary that goes beyond these three case studies in order to generalize the results.

Transaction costs are often used to predict the disappearance of intermediaries (Malone et al. 1987). In all three case studies the web was initially used to reduce transaction costs. This provides support for the disappearance of intermediaries. Although the transaction costs is used to predict the direct interaction between parties, the RDW and IRS case studies clearly illustrate that intermediaries are also used to reduce the transaction costs. Car buyers and sellers only have to fill in one form containing all information, instead of having to fill in a form for the car dealer and one form for the RDW and dealing with them separately. In addition, they hardly are aware that the RDW is involved in the change of ownership. In the case of the IRS the companies using financial software have only to press one button and ensure that the authentication mechanism is correct to submit their tax information to the IRS. There is no need for filling in long forms, as the software derived the right information. This information does not necessarily need to be submitted to the IRS, it can be submitted to the accountant which checks the information and in turn submits it to the IRS. This brings us to the proposition that intermediaries can reduce the transaction costs. It might be possible that in many other situations, intermediaries (like the post office) contribute to the transaction costs. Consequently, this proposition needs to be analyzed in more details. In which circumstances can intermediaries help tot reduce the transaction costs for government and for businesses or citizens. In addition this confirms that the recurring pattern of intermediation, disintermediation, and reintermediation (Chircu et al. 2000).is followed. As initially intermediaries were used, then due to the rise of the Internet the logical way to forward was disintermediation and thereafter new ways of reducing costs and improving services providing were sought be reintermediation.

The use of intermediaries has a negative impact on the direct visibility of the government. There should be mechanisms for ensuring the overall quality, for example a fraudulent car dealer might impact the trust in the RDW or even in the government. Furthermore, citizens or businesses might not know if the government uses the intermediary and might be reluctant to interact with the government in this way. One of the objectives of the Dutch government is to have equal access for all and that all citizens are handed in a fair and an equal manner. Therefore, the quality and access should be guaranteed in order to avoid that certain groups, for example disabled, have no access to these channels. This result in the proposition that

the use of (private) intermediaries needs trusted mechanisms. The type of mechanisms that can be used need further research attention and needs in-depth case study research.

CONCLUSIONS

Governments are using multiple channels to interact with their citizens and businesses. Front-desks, call centers and web sites are used to directly interact with their client segments and in this way bypassing intermediaries. In the literature we found that the idea of disintermediation is often regarded as a way of cutting costs and improving efficiency. As budgets of government agencies are lowered this seems to be a logical strategy for governmental for governments to pursue. In this paper we investigated three case studies and found that pursuing a reintermediation strategy might be fruitful to reduce costs and to create a demand-driven government. Four intermediation roles as used in e-commerce literature were used to analyze the intermediation roles and it was found that especially the facilitating and trusted role are of importance in e-government, as the intermediaries were viewed as a channel to enable demand-driven government and reduce transaction costs.

Disintermediation and reintermediation strategies are not necessarily conflicting and can be complimentary and both can be necessary to advance e-government. Disintermediation might be necessary to get rid of traditional channels in order to reduce costs and reintermediation should result in the creation of new low-costs channel contributing to a demand-driven service provisioning. Especially intermediaries can augment interaction and transaction channels. On the other hand the use of especially private organizations as interaction channels might be risky. Conflicts of interests, concerns on privacy, equal and fair access need to be avoided and trusted mechanism needs to be in place. For future research, we argue for more research into the services provided by and added value of intermediariesand to investigate in which circumstances intermediaries can help tot reduce the transaction costs and improve customer-orientation and finally to generalize the findings.

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REFERENCES

1. Bailey, J.P., and Bakos, J.Y. "An Exploratory Study of the Emerging Role of Electronic Intermediaries," International *Journal of Electronic Commerce* (1:3) 1997, pp 7-20.
2. Chircu, A.M., and Kauffman, R.J. "Strategies of Internet Middlemen in the Intermediation/Disintermedation/Reintermediation cycle," *Electronic Markets* (9:2) 1999, pp 109-117.
3. Chircu, A.M., and Kauffman, R.J. "Reintermediation strategies in business-to-business electronic commerce " *International Journal of Electronic Commerce* (4:4) 2000, pp 7-42.
4. Clemons, E.K., and Row, M.C. "Information Technology and Industrial Cooperation: The Changing Economics of Coordination and Ownership," *Journal of Management Information Systems* (9:2) 1992, pp 9-28.
5. Coase, R. "The Nature of the Firm," *Economia* (4) 1937, pp 386-405.
6. Devadoss, P.R., Pan, S.L., and Huang, J.C. "Structurational analysis of e-government initiatives: a case study of SCO," *Decision Support System* (34:3) 2002, pp 253-269.
7. Gellman, R. "Disintermediation and the Internet," *Government Information Quarterly* (13:1) 1996, pp 1-8.
8. Giaglis, G.M., Klein, S., and O'Keefe, R.M. "The role of intermediaries in electronic markeplaces: developing a contigency model," *Information Systems Journal* (12:3) 2002, pp 231-246.
9. IRS "Visie op dienstverlening 2010," Dutch Inland Revenue Service, Utrecht.
10. Janssen, M., and Klievink, B. "Improving Governmental Service Delivery: Disintermediation and Re-Intermediation Strategies for Multi-Channel Management," *8th European Conference on E-Government*, Lausanne, Switserland, 2008.
11. Janssen, M., and Sol, H.G. "Evaluating the role of intermediaries in the electronic value chain," *Internet Research; Electronic Networking Applications and Policy* (19:5) 2000, pp 406-417.
12. Malone, T.W., Yates, J., and Benjamin, R.I. "Electronic Markets and Electronic Hierarchies," *Communications of the ACM* (30:6) 1987, pp 484-497.
13. Orlikowski, W., and Lacono, S. "Desperately Seeking the “IT” in IT Research-A Call to Theorizing the IT Artifact," *Information Systems Research* (12:2) 2001, pp 121-134.
14. Resnick, P., Zeckhauser, R., and Avery, C. Roles for Electronic Broker Mahwah, New Jersey, 1995, pp. 289-306.

15. Sarkar, M.B., Butler, B., and Steinfield, C. "Intermediaries and Cybermediaries: A Continuing Role for Mediating Players in the Electronic Marketplace," *Journal of Computer Mediated Communication* (1:3) 1995.
16. Spulber, D.F. "Market Microstructure and Intermediation," *Journal of Economic Perspectives* (10:3) 1996, pp 135-152.
17. Undheim, T.A., and Blakemore, M. (eds.) A Handbook for Citizen-centric eGovernment. cc:eGov, 2007.
18. Williamson, O.E. Market and Hierarchies, Analysis and Antitrust Implications. A study in the economics of internal organization Macmillan, New York, 1975.
19. Yin, R.K. Case Study Research: Design and methods Sage publications, Newbury Park, CA, 1989.