

**FACTORS AFFECTING THE GROWTH OF E-COMMERCE IN JORDAN****Zakarialssa Saleh****IT Program. The American Intercontinental University (AIU)****Drzaatreh@AIM.com****ABSTRACT**

This study examines the barriers to E-commerce growth in Jordan. The adoption rate of e-commerce in Jordan is significantly lower when compared to other undeveloped countries, even though the overall e-commerce growth is slow, broadband communication is widely available, and Jordan has multiple internet service providers (ISPs) . After a review of existing literature on the adoption of information systems, the choice was made to use the two core constructs of TAM (Perceived Ease of Use, and Usefulness) and some of the previously used Constructs, and then extended upon them to incorporate cultural factors, assuming that it can play an important role and shapes consumers' perceptions towards a technology, and therefore, it can affect the intention to use and adopt e-commerce. the research found that Security risks was perceived by non-adapters as the highest barrier, followed by uncertainty avoidance and lack of trust in virtual stores, and thus they are proved to be significant determinant of the intention to use e-commerce. The study suggested that ease of use couldn't be the only predictive criterion for an individual's adoption of a technological innovation. The findings of this study add support to the contention that predicting user adoption of a computer-based innovation or product is more complex than just measuring ease of use

**1. INTRODUCTION**

E-commerce has a potential to add value to businesses and consumers in developing countries as it did in the developed countries. Yet Jordan as most developing countries didnot gain the full benefits offered by modern information and communications technologies, which furnishes the "runway" for e-commerce take-off. It is true that some business sectors like the financial institutions as well as the government are providing some and limited electronic services, but statistics indicate that the number of all Jordanian industrial, service and/or trade companies that have a registered website is around 700. However, this does not cover much of the potential service that ecommerce can offer. This study will attempt to find the factors affecting the growth of commerce in Jordan as well as the future outlooks based on the current existing technology and telecommunication infrastructure.

**2. PROBLEMS AND CHALLENGES**

While some business sectors in Jordan are offering some electronic services, however, this does not compare to what has been achieved in the developed countries where e-commerce is no longer used only as a second option (or channel) for businesses to extend their customer reach, but also a means for competition and tool for business automation. To state the issue clearly, compared with a fully developed country like the USA, by 2017, 60% of all U.S. retail sales will involve the Internet in some way, either as a direct e-commerce transaction or as part of a shopper's research on a laptop or mobile device, according to a new report by Forrester Research Inc. (Mulpuru et. al, 2013). This

represents positive growth of a 10 percent annual increase, and suggests that a 10.3% of total retail sales in the U.S. will be online purchases. On the other hand, The Arab Advisors Group survey indicates that e-commerce users in Jordan have spent an estimated \$192 million in e-commerce transactions (paying for services is around \$75 million, pay bills online around \$42 million, and buying products online around \$75 million) and that the number of Jordan Internet users who use e-commerce are about 181,000 which is around 3.0% of the total population in Jordan (The Arab Advisors Group, 2010). In 2011, the number of e-commerce users in 2011 was estimated at around 514,000, or around 8.2 per cent of the total population of Jordan (Ghazal, 2012). If we assume that this will present a trend for an annual increase of e-commerce users in Jordan, it looks like, with such high increase, it will take a very long time to have well established e-commerce services in the country. However, while e-commerce facilities have been developed by various service providers, e-commerce is still in the developmental stages of use for the business community (US Department of Commerce, 2013).

A second issue is that the business organizations in Jordan have also developed competitive strategies when using the technology to expand their customer, but the fact is, it is still a dream to go online and look for an apartment for rent, or buy/sell a used car in Jordan, when it is possible to buy groceries and order your lunch online in the developed countries. All you need is a computer and an Internet, which both are not harder to access in Jordan than they are to access in any developed country. Given the bad economic situation in Jordan for instance, the initiative to bridge the global digital divide may even sound like a mission impossible.

Firms utilize e-commerce for many purposes, including enhancing efficiency and cost reduction, and for providing better services to their customers (Apu and Latham 2011; Harrison and Van Hoek 2011). However, for e-commerce to reach an acceptable business development objectives, it is important for businesses to overcome the e-commerce challenges in Jordan (see table 1). E-commerce challenges identified from the literature are classified as - social, technological, managerial and business related. In addition, for Jordan, this research assumes two more challenges which are socio-economic factors and government's regulatory elements, which are believed to have strong impact on e-commerce growth. The social challenges lie in the lack of awareness, lack of training, and lack of trust. The WebRTC Outlook 2014 suggests that lack of awareness is the most significant barrier to adoption, making awareness to be a major preventive, and that includes customer and organizational awareness of the benefits of e-commerce. While comparing mobile services in Jordan to Internet usage, it is clear that for the same expenses the number of mobile users is increasing remarkably, which proves that affordability is not a problem behind the relatively low e-commerce usage. Lack of training is found to be a major obstacle where people are not prepared to handle operations in an online environment, where lack of training was a deterrent in innovation adoption, and the more the training the more the adoption of innovation (Imaita 2013). Lack of training creates confusion for those accustomed to traditional systems when they are introduced to innovative techniques. The lack of trust remains another challenge with respect to using e-commerce and doing business with people never seen or met before. It is even more critical when it comes to making electronic payment. A recent research conducted by Popoola in 2013, indicates that the concept of trust in conducting financial transaction online has received a significant rate of interest and was recognized by the researcher as one of the key motives why a large percentage of consumers are still reluctant to accept Internet banking, most especially in developing countries.

Table 1: Current Situation facing E-Commerce Growth in Jordan

Infrastructural Layer	Jordan Condition
Customer Commerce Propensity	E- -Direct shopping preference; -Lack of trust in product quality; -Oral culture and price negotiation; -Not Owing A credit card
E-Payment	-Some adoption of non-cash payment; -Overspending; -Lack of trust in non-cash Payment to in virtual Stores; -Lack trust due to Security risks
Software Industry	-Strength in business applications; -Some support to e-commerce
Delivery	-Limited post service; -Expensive Private courier services; - Lack of Mailing address

The technological impact is clear on how variety of technologies enabled the move to digital economy business processes in the developed countries. Thus, Jordan is no different, and ecommerce success relies heavily on a number of prevailing technology infrastructures in a Jordan. Firstly, one of the prerequisites for e-commerce development and, hence, important driver for the growth is telecommunications infrastructure. The managerial and business related issue is a delivery issue, where they need to find ways to deliver shipment to all or most shoppers. This is due to the lack of standardized address numbering system (usually houses are identified by being around a known object like a school name, or a main streets' intersection). Once that known location is reached, the next step is to start asking neighbors for the exact address. That's why the major international package delivery companies like FedEx and DHL, will call the recipient to the company's office for picking a shipped item, which by default is a full elimination of the shopping convenience that e-commerce provides. As for the socio-economic factor, low income Jordanian workers do not have a credit card (many do not even have a bank account).

### 2.1 Technology Readiness as A Barrier to E-Commerce

E-commerce is being described as the utilization of various IT tools that support the advancement and development of business activities both internally and externally (Ghobakhloo et al. 2011). The Internet is a major driving force of change in the global marketplace. It is a global information highway linking countries like Jordan with the outside world, where Jordan is considered to be one of the more advanced countries in the region in this field. Even though the overall internet penetration rate is low, broadband is widely available, and Jordan has multiple internet service providers (ISPs) (US Department of Commerce, 2013). E-commerce provides exceptional opportunities for expanding commerce, disseminating investment, easing business transactions, providing a larger and diverse market, as well as supplying an great marketing tool. However, businesses in developing countries are faced with different challenges than businesses in developed countries (Ghobakhloo et al. 2011), where e-readiness can be classified as one barrier that houses all other barriers to e-commerce adoption in developing countries including Jordan. This represents the ability of a country, an organization or an establishment to create, adopt, diffuse and use various components of the networked economy (Uzoka et al. 2007). E-readiness in developing countries is low when compared with the developed countries which may be responsible for the slow rate of e-commerce adoption in those countries. In addition, Nath and Standing (2010) highlight the influence of company size upon the adoption of e-commerce and also claim that the adoption of e-commerce is directly related to the type of industry to which the organization belongs. Compared with developed nations, e-commerce has not been as successfully adopted in developing countries (Al-hudhaif and Alkubeyyer 2011), which suggests that the development of EC in developing countries is relatively low. Developing countries are still slow to keep up with emerging IT solutions to aid e-commerce (Kapurubandara and Lawson 2006).

## 3. RESEARCH OBJECTIVES

This research will look into the factors and barriers that affect e-commerce growth in Jordan. It will provide an overview of the different success criteria and then identify the key factors that can effect e-commerce growth and success. The primary research question in this study is trying to identify and determine the internal and external barriers that are preventing the growth of e-commerce in Jordan?

### 3.1 Research Questions

Focus: What are the barriers facing e-commerce in Jordan?

1. Q1: How would perceived ease of use, usefulness and convenience affect the intention of Jordanian consumers to use e-commerce?
2. Q2: How does quality evaluation affect the intention of Jordanian consumers to use e-commerce?
3. Q3: How does uncertainty avoidance affect the intention of Jordanian consumers to use e-commerce?
4. Q4: How does perceived security risks affect the intention of Jordanian consumers to use e-commerce.
5. Q5: How does trust in virtual Stores affect the intention of Jordanian consumers to use e-commerce?

6. Q6: How would the social challenges affect the intention of Jordanian consumers to use e-commerce?

### 3.2 Research Limitations

In this study, the dependent variable is the behavioral intention of Jordanian consumers to use e-commerce. The construct of attitude has been taken out in order to simplify the study, which is consistent with previous studies (Hong et al. 2001, Salisbury et al. 2001, and Wang et al. 2003). Furthermore, the construct actual usage was omitted because behavior intention to use is a more appropriate measure to use than actual usage in line with Agarwal and Prasad (1999) and Cheng et al. (2006).

### 4. Methodology and Research Hypotheses

The method of research chosen for this study will be a survey research. The survey questionnaire will collect data regarding consumer's characteristics, consumers' attitude scores, and consumers' interest in e-commerce service. A questionnaire is an effective method used to collect information regarding sample's characteristics, and opinions. The findings from survey questionnaires can then be generalized to the larger population the sample is representing. In addition, current trends in the technology deployment within the business sectors as well as the current state and applicability of e-commerce in Jordan will be evaluated through the published literature and available statistics. The research will be based on the assumption that Jordan has adequate and efficient e-commerce requirements in general; therefore, the stress of the study is to try and measure whether or not there exist suitable and or appropriate community culture. This research will also discuss a series of studies that provide an empirical evaluation of e-commerce factors and barriers in other developing countries, and uses the experimental results to begin building a body of knowledge about these type of barriers and try to propose a systematic approach to overcome these barriers. The research questions and the research hypotheses are mapped in table 2.

Table 2: Research Questions and Hypotheses Association

Question Number	Associated Hypotheses	Research
Q1	H1, H2, H3, H4	
Q2	H5, H6	
Q3	H5, H7	
Q4	H8, H9	
Q5	H6, H8	
Q6	H10, H11	

#### 4.1 Perceived Ease of Use, Usefulness and Convenience

The technology acceptance model (Davis 1989) is one of the most widely used models of IT adoption. According to TAM, IT adoption is influenced by two perceptions: usefulness and ease of use. Many researchers had shown that perceived usefulness affects IT adoption, but others had mostly failed to do so regarding perceived ease of use (Verma,2001; Gefen& Straub 2000; Scannell,1997). In addition, convenience plays a prominent role in choices of today's consumers. E-commerce aims to utilize the technology to allow shoppers to experience convenient, instant and suitable shopping at unrestricted time and place.

H1: Perceived ease of use has direct effect on perceived usefulness

H2: Perceived usefulness has direct effect on Intention to use.

H3: Delivery time has direct effect on Convenience

H4: Convenience has a direct influence on Intention to use

#### 4.2 Uncertainty Avoidance

Uncertainty avoidance is one of the five cultural dimensions presented by Geert Hofstede in his 1980 book, *Culture's Consequences* as a society's tolerance for uncertainty and ambiguity and reflects the extent to which members of a society attempt to cope with anxiety by minimizing uncertainty (Hofstede 1980). Consistent with this, it is possible that uncertainty avoidance will affect the way individuals choose to purchase online. According to the authors face-to-face and telephone communication are information rich channels because of the richness of the cues that are transmitted to the listener Hsiao (2009); Wang et al. (2006); Steinfield et al.(2001); Steinfield et al.(2002). In addition, Consumer trust plays an important role in adoption of any technology.

H5: Quality evaluation has direct effect on Uncertainty avoidance

H6: Quality evaluation has direct effect on trusting virtual Stores

H7: Uncertainty avoidance has direct effect on the intention of Jordanian consumers to use to use e-commerce.

#### 4.3 Perceived Web Security

Perceived web security was presented by Salisbury et al. (2001) and defined as "the extent to which one believes that the World Wide Web is secure for transmitting sensitive information". Construct of security or privacy were covered in several studies (Heyman and Pierson (2011); (Weber (2010); Fabian and Gunther (2009); Krapf . (2007); Cheng et al. (2006); Gefen, et al. (2003) ; Miyazaki and Fernandez (2001)). Conducting activities like banking or shopping through the Internet have several advantages such as less time and money spend, but also there are some concerns. Since the internet eliminated the presence of the merchant or the banker, individuals may feel threaten when they have to pay money and give personal details such as credit card numbers. Security concerns are raised by incidents regarding stories about internet thefts and attacks. Individuals with less security concerns will prefer to use the internet to conduct transactions, which leads to formulation of the following hypothesis.

H8: Perceived Security risks has direct effect on trusting virtual Stores

H9: Perceived web security positively affects the intention of Jordanian consumers to use e-commerce.

#### 4.4 Unified Mailing Address and Delivery times

Product delivery is critically important. In general, the mail is delivered to a well-known establishment, or a P O Box because of the lack of defined street addresses acceptable to the various delivery services like FedEx, DHL, etc. In many cases, these companies would call the recipient into their faculties to come and pick up the mail. Therefore, this research identifies the mailing system in the country as an obstacle to e-commerce adoption.

H10: lack of defined home address has a direct effect on the intention of Jordanian consumers to use to use e-commerce

H11: lack of defined home address has a direct effect on the Delivery times

#### 4.5 Credit Cards Availability

There are multiple benefits to having a credit card including being a convenient method of making payments for shopping, and more importantly when shopping online. In addition, when the shoppers want to buy something that is way out of their budget at the moment, they can chose to carry the transaction through using a credit card and then make the payments in instalments.

H12: Not having a Credit card has a direct effect on the intention of Jordanian consumers to use to use e-commerce.

#### 4.6 Instrument Testing

To examine the initial reliability of the measuring items a pilot test of the 36-item measurement instrument was performed. Questionnaires were distributed to 40 research students and academic staff in. The assessment was based on Cronbach's Alpha. Since it was an early stage of research on hypothesized measures of a construct, the minimum level of reliability was set around 0.70 in the study. The inter-item correlation and the effects of deleting items on Alpha were used to determine the candidate items for further studies. As a result, two items were dropped and the number of measuring items became 34. The Cronbach's Alpha of the measurement instrument is shown in Table 3. The detailed scale items are illustrated in table 4.

Table 3: Cronbach's Alpha of the Research's Measurement Instrument

Construct	Pilot Test	Alpha	Field	Alpha
	Items	n=40	Items	n=315
Perceived Ease of Use	4	0.681	4	0.794
Quality Evaluation	3	0.814.	3	0.81
Perceived security	3	0.725	3	0.764
Perceived Trust	5	0.903	5	0.846
Delivery Times	3	0.934	2	0.881
Uncertainty avoidance	5	0.738	4	0.833
Perceived Usefulness	4	0.887	4	0.88
Credit card	2	0.854	2	0.882
Convenience	5	0.853	5	0.868
Mailing address	2	0.697	2	0.86

Table 4: Scale items of the Questionnaire

Variable	Scale item Statements	Source
Perceived Ease of Use	My interact with e-commerce is easy for me to understand	Davis, [1989]
	E-commerce makes it easier to do conduct my transactions	Davis, [1989]
	I find it easy to recover from errors encountered when buying online	Davis, [1989]
	Overall, I believe that online banking is easy to use	Davis, [1989]
Quality Evaluation	I do not need to test and trial of products	New Item
	I will only buy a product that I am familiar with	New Item
	I can conveniently change or return a low-quality product	New Item
Perceived security	I believe my information will not be lost during a session	Yousafzai et al [2009]
	I believe that the security system will confirm my identity before disclosing account information	Yousafzai et al [2009]
	I believe that the security system provides a secure environment in which to share credit information	Yousafzai et al [2009]



Variable	Scale item Statements	Source
Perceived Trust in virtual stores	E-Commerce is reliable.	New Item
	Using E-Commerce , I can rely on business to keep the promises that they make.	New Item
	I Will not trust online purchasing until I have clear evidence that it can be trusted	New Item
	Virtual stores cannot be trusted; there are just too many uncertainties.	New Item
	E-Commerce has the chance of fraud.	New Item
Delivery Times	Products will be delivered to me within reasonable time	New Item
	I can expedite the deviltory time for argent products	New Item
Uncertainty avoidance	Product information must be spelled out in detail	New Item
	I cant be sure of the legitimacy of business or the website	New Item
	I believe that my transaction information will only reach the target bank account	Chellappa [2003]
	I believe that the security system stops any unauthorized changes to a transaction	Chellappa [2003]
Perceived Usefulness	E-Commerce transactions save more time.	Davis, [1989]
	E-Commerce makes it easier for me to do shopping.	Davis, [1989]
	E-Commerce provides me prompt and efficient services.	Davis, [1989]
	E-Commerce provides systems to give appropriate feedback.	Davis, [1989]
Credit card	I have no problem Obtaining a credit card number *	New Item
	I can easily have a pre-charged credit card	New Item
Convenience	I Could shop anytime I want to	Jiang et, al [2013]
	I Could order products wherever I am	Jiang et, al [2013]
	The websites are always accessible	Jiang et, al [2013]
	It is easy to understand and navigate websites	Jiang et, al [2013]
	I can search for desired products quickly	Jiang et, al [2013]
Mailing address	It is difficult to get packages delivered to my door steps	New Item
	It is hard to provide details about my address	New Item

\* This question was explained as if you have a credit card or how easy it is to get one

## 5. DATA ANALYSIS

This study relied on primary data collection through use structured questionnaires. Two sets of questionnaires were designed. One for the Business and the second one was designed for the users. The computations were done using SPSS. Multiple regression models incorporating several independent variables were applied to analyze the relationships of the variables. The applicable formula used was:

$$y = a + b_1 x_1 + b_2 x_2 + \dots + b_n x_n$$

$b_1$  is the slope of the plane along the  $x_1$  axis and  $b_2$  is the slope of the plane along the  $x_2$  axis etc., and “ $a$ ” is the intercept of the regression equation. Regression analysis was conducted to identify the factors that influence Jordanian shoppers’ attitude towards e-commerce adoption, and a second regression analysis was also conducted to explore the impact of those attitudes with the intention to purchase online. For the research hypothesis, multiple regression analysis was used to analyze the relationship between perceived usefulness, perceived ease of use, technological context and environmental context and attitude towards e-commerce adoption.

A total of 350 questionnaires were distributed where 8% of the participants reported that they did not know what e-commerce is, and did therefore not complete the rest of the questionnaire. Therefore, 315 valid questionnaires were collected and analyzed from participants between the age of 18-50 years. The targeted participants were shoppers of several major shopping malls in Jordan. Demographic data were collected regarding participants’ gender, age, education, Monthly income and familiarity with e-commerce (see table 5).

Table5: Participants’ Demographic Data

Variable	Total	Buyers	Non
Gender			
Male	41	8,2	91,8
Female	59	6.1	93.9
Age			
18 - 25	62.5	8.8	91.2
26 - 35	20.3	3.5	96.5
36 - 45	11.4	1.2	98.8
Over 45	5.7	1.5	98.5
Education			
High School	27.6	3.9	96.1
Associate degree	29.8	5.7	94.3
University degree	36.8	1.8	98.2
Graduate degree	5.7	1.6	98.4
Monthly income			
Less than \$500	27.9	3.5	96.5
\$500-\$1000	47.6	8.1	91.9
Over \$1000	25.5	2.8	97.2
E-commerce	43.1	26.5	73.5

Of the participants, 129 (41%) were males, and 186 (59%) females. All age groups were represented. Of the analyzed questioners 46.7% were regular Internet users, 27.3 % use it occasionally, 14.0% had only tried. 7.9 % had not yet tried, but reported that they were interested to. Another 4.1% had not yet tried, and had no intention to do so. 11.4% reported that they had made purchases over the Internet. As many as 60.6% had not yet made any purchases, but were interested to, whereas 27.9% had no intention to shop online.

Results indicated that non-adapters showed higher means regarding eight of the ten tested Construct which includes; being not able to touch or inspect the product for quality evaluation (M = 3.57, sd. = 0.92), not owning a credit card (M = 3.04, sd. = 1.69 ), Perceived Usefulness (M = 3.60, sd. = 1.36), Perceived Security (M = 3.93, sd. = 1.12), product delivery times (M = 3.56, sd. = 1.03), Convenience (M = 3.59, sd. = 1.27), Lack of trust in virtual Stores, (M=3.68 sd. = 1.08 ) and not having a home mailing address (M = 3.32, sd. = 0.49), while adapters showed higher mean scores in only one barrier; uncertainty avoidance (M = 3.69, sd. = 1.31). Ease of use scored almost the same for adapters and non-adapters ( M = 3.33, sd. = 1.21). The study suggested that ease of use couldn't be the only predictive criterion for an individual's adoption of a technological innovation. The findings of this study add support to the contention that predicting user adoption of a computer-based innovation or product is more complex than just measuring ease of use (Verma,2001; Gefen& Straub 2000; Scannell,1997), where security risks was perceived by non-adapters as the highest barrier , followed by uncertainty avoidance and lack of trust in virtual stores, and not owning a credit card and not having a mailing address were perceived by non-adapters as the lowest barriers (see table 6).

Table 6: Top nine barriers perceived by Jordanian Shoppers

Variable	Mean	SD	p
Ease of Use	3.33	1.21	0.28
Quality evaluation	3.57	0.92	0.03
Security risks	3.93	1.12	0.88
Lack of trust in virtual	3.68	1.08	0.67
Delivery times	3.56	1.03	0.17
Uncertainty	3.69	1.31	0.00
Perceived Usefulness	3.42	1.44	0.21
No Credit card	3.04	1.69	0.00
Convenience	3.59	1.27	0.08
Mailing address	3.32	0.49	0.01

## 6. CONCLUSIONS

The research's results show that perceived ease of use positively affects perceived usefulness, and that perceived usefulness, in turn, positively affects behavioral intention. In particular, perceived usefulness represents a mediator variable between perceived ease of use and behavioral intention. A number of factors have hampered the growth of e-commerce in developing countries. Yet, the main perceived obstacle to increased Internet usage is very similar in companies from both developed and developing countries. However, the Internet users in developing countries including Jordan only

constitute a small percentage of the total global users, reflecting the fact that the current distribution of Internet access needs to be restructured, especially when firms already using the Internet consider the lack of network security to be the primary problem. Among many potential users, a serious lack of confidence in e-commerce impedes usage. This research found that firms make balancing usage of video conferencing and other communication methods such as telephone, e-mail, and face-to-face communications. However, scarcity of information technology administrative systems and a lack of experience make firms hesitate to utilize e-commerce fully to digitize all of the administrative works related to business transactions. High costs and fees to start e-commerce by utilizing e-marketplaces are a severe hindrance, especially for enterprises incapable of developing their own systems. Building trust or confidence is a precondition for doing e-commerce in a country like Jordan.

Without trust or confidence, the very effort of promoting e-commerce in developing countries would be fruitless. E-commerce users, however, said fears of e-fraud and delays in delivery still discourage them from making online transactions. The promotion of trust and confidence depends on a number of factors. Goldstein and O'Connor (2000) pointed out that e-commerce requires legal norms and standards covering for example, consumer protection, liability assignment, privacy protection, and process and technical standards. It is necessary to prepare users, and help them build confidence in the use of e-commerce solutions. This may be done not only by the use of adequate technologies to ensure technical security but also by strategic initiatives aiming at a change in user perspectives on the reliability of ICT in commercial transactions. Legal and regulatory development acts as a possible pre-condition for the promotion of such confidence.

When selecting an e-commerce platform and hosting service, the merchant needs to ensure the platform employs strong encryption for payment processing and customer data retention. The data center that physically hosts the customer data should likewise employ onsite security. If the merchant is using an online third party credit card processor, the merchant also needs to ensure the payment processor is secure. The barrier that customers can't touch and feel a product can be deteriorated by providing detailed product disruption supporting product images. Images need to fairly and accurately reflect the product. An e-commerce platform should also support the ability to attach multiple pictures to a product catalog page, allowing the consumer to view the product from multiple angles.

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