The key determinants of Internet banking service quality: a content analysis

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Introduction
The incredible growth of the Internet is changing the way corporations conduct business with consumers. The banking industry is no exception. Many new virtual banks, such as CompuBank and Net.B@nk, have entered the banking industry, providing customers with financial services over the Internet. Since these Internet-only banks usually have no branch offices, they can substantially reduce operating and fixed costs by replacing employees and physical facilities with information technology. These cost savings have helped Internet-based banks offer lower or no service fees and higher interest rates on interest-bearing accounts than traditional banks (Gerlach, 2000).

In order to sustain their competitiveness in the marketplace, a number of traditional brick-and-mortar banks have also been moving to the Internet. Gerlach (2000) reported that more than 500 conventional banks in the US currently offered customers online access to their accounts. In fact, major banks in the US, such as Bank of America and Wells-Fargo, have offered a variety of services, such as:
- CDs;
- credit cards;
- funds transfer; and
- loans.

through their Web sites. Unfortunately, although Internet banks have focused their attention on improving their banking service quality, many of them still seem to be lagging behind their customers’ ever increasing demands and expectations. Rose (2000) evaluated the service quality of 23 US Internet banks, including 12 Web-only banks, in terms of seven service categories:
1. opening an account;
2. deposits and withdrawals;
3. rates and fees;
4. navigation and ease of use;
5. bill paying;
6. security; and
7. customer service.

She found that most of the sampled banks showed an unsatisfactory level of service quality and argued that:
...online banking today is often a maddening, frustrating affair that can cause as many problems as it solves (Rose, 2000, p. 115).

To survive in the highly competitive Internet banking industry, it is apparent that the banks need to provide customers with high quality services (Mefford, 1993). In so doing, bankers are first required to understand the attributes customers use to judge service quality. Then, steps need to be taken to monitor and enhance the service performance. There have been numerous studies identifying the key service quality dimensions in the traditional banking environment, where personal interaction between customers and bank employees is a primary service delivery and communication channel. However, relatively little literature has investigated service quality attributes in the Internet banking industry, where non-human interaction via the Internet is a main service delivery and communication channel.

The current study aims to provide insights into service quality in the context of emerging Internet banking. The specific objectives of this study are four-fold:
1. What do customers perceive to be the key dimensions of Internet banking service quality?
2 Which quality dimensions are most significantly associated with customers' satisfaction and/or dissatisfaction?

3 Are there any substantial discrepancies, in terms of satisfying and dissatisfying factors, between customers of the Internet-only banks and those of traditional banks offering Internet banking services?

4 What can be recommended to improve the customers' perceived Internet banking service quality and, in turn, their satisfaction?

Background

Customers' perceptions of service quality and their satisfaction are profoundly influenced by their service encounters. The term service encounter can be defined as: ... a period of time during which a consumer directly interacts with a service (Shostack, 1985, p. 243).

This concept encompasses all aspects of the service firm with which the consumer may interact, including its personnel, its physical facilities, and other tangible elements, during a given period of time (Bitner et al., 1990), and it involves both interpersonal and non-human interactions with service providers (Meuter et al., 2000).

Recently, many banks have used the Internet, as a new market channel, to offer their customers a variety of services 24 hours a day. This Internet banking, compared to traditional banking, heavily involves non-human interactions between customers and online bank information systems. Therefore, in order to form a basis for the current study, two areas of literature were selected and reviewed. One was the service quality and customer satisfaction literature focused on the interpersonal service encounter, with a particular emphasis on Internet banking.

The other was the information systems quality literature concentrated on computer and networking-based impersonal interactions, with a particular emphasis on end-user computing satisfaction. Based on the literature review, the authors identified the following three broad conceptual categories related to Internet banking service quality:

1 customer service quality;
2 online systems quality; and
3 banking service product quality.

Major findings of the relevant literature are discussed according to the three categories in this section.

Customer service quality

Recent studies have shown that high levels of customer service quality can exert a positive influence on customer satisfaction (Parasuraman et al., 1988; Cronin and Taylor, 1992). Unlike the manufacturing product quality that can be readily assessed, service quality is an elusive and abstract construct that poses definition and measurement obstacles. The literature has suggested that service quality is determined by the differences between customers' expectations of service provider's performance and their evaluation of the services they received (Parasuraman et al., 1985, 1988). Parasuraman et al. (1985, 1988) have conducted well-known studies to uncover key service quality attributes that significantly influence the customers' perceptions of overall service quality. They initially identified ten determinants of service quality based on a series of focus group interview sessions. These attributes were (Parasuraman et al., 1985):

1 tangibles;
2 reliability;
3 responsiveness;
4 competency;
5 courtesy;
6 communication;
7 credibility;
8 security;
9 access; and
10 understanding the customer.

Parasuraman et al. (1988) later distilled these ten dimensions into five by using a factor analysis. These five dimensions are:

1 tangibles;
2 reliability;
3 responsiveness;
4 assurance; and
5 empathy.

Based on the five dimensions, they developed SERVQUAL, a 22-item survey instrument for measuring service quality.

The SERVQUAL instrument has been widely used to assess the service quality of various service organizations including banks (Cowling and Newman, 1995). For example, according to Cowling and Newman (1995), one bank found that, among the SERVQUAL five quality dimensions, the disparity between the customers’ expectations and their perceptions was the highest for reliability, responsiveness, and empathy, and the lowest for tangibles. However, the SERVQUAL instrument has also received a lot of criticism from other researchers (Johnston, 1995). Many critics argue that a single instrument like
SERVQUAL is not appropriate for measuring service quality across industries (e.g. Cronin and Taylor, 1992; Bowers et al. 1994; Rowley, 1998). For example, Cronin and Taylor (1992), in their study on service quality in the banking, pest control, dry cleaning, and fast food industries, found that the five-dimension structure of the SERVQUAL scale was not confirmed in any of their samples.

In the case of the banking industry, Johnston (1995) examined, by using the critical incident technique, banking customers’ perceptions about the service quality they received and found 18 service quality attributes. They are:

1. access;
2. aesthetics;
3. attentiveness/helpfulness;
4. availability;
5. care;
6. cleanliness/tidiness;
7. comfort;
8. commitment;
9. communication;
10. competence;
11. courtesy;
12. flexibility;
13. friendliness;
14. functionality;
15. integrity;
16. reliability;
17. responsiveness; and
18. security.

Further, Johnston (1995, 1997) examined the effects of service quality dimensions on the customers’ satisfaction or dissatisfaction, and then classified the dimensions into satisfying only, dissatisfying only, and dual factors (factors capable of either satisfying or satisfying customers depending on the quality level of the factors). Regarding the three classifications of service quality attributes, Johnston (1997) argued that the causes of dissatisfaction are not necessarily the obverse of the causes of satisfaction: A bank which opens and closes erratically will lead to dissatisfied customers; However, a bank which opens and shuts precisely on time does not automatically lead to delighted customers (p. 112).

In addition, Lassar et al. (2000) examined the effects of service quality on customer satisfaction in private banking by using two well-known measures, the SERVQUAL and the technical/functional quality. They found that the technical/functional quality dimensions clearly outperformed the SERVQUAL dimensions in explaining the variance of customer satisfaction. Although this result does not necessarily mean that the technical/functional quality is superior to the SERVQUAL generally, Lassar et al. (2000) suggested that the technical/functional quality-based model is better for predicting customer satisfaction when customers are actively involved or highly interested in service delivery. Bahia and Nantel (2000) also proposed an alternative measure of perceived service quality in retail banking that comprises 31 items with six underlying key dimensions. These dimensions are:

1. effectiveness and assurance;
2. access;
3. price;
4. tangibles;
5. service portfolio; and
6. reliability.

On the other hand, Oppewal and Vriens (2000) suggested the use of conjoint experiments to measure service quality. They developed an application for measuring retail banking service quality, which consists of 28 attributes including four service quality dimensions such as:

1. accessibility;
2. competence;
3. accuracy and friendliness; and
4. tangibles.

Of the four dimensions, the accuracy and friendliness dimension turned out to be the most important factor in determining banking preference, followed by competence, tangibles, and accessibility.

As for Internet banking, relatively little empirical research has addressed the issue of the key underlying dimensions of Internet banking service quality. Joseph et al. (1999) investigated the influence of technology, such as the ATM, telephone, and Internet, on the delivery of banking service. Their study identified six underlying dimensions of electronic banking service quality:

1. convenience/accuracy;
2. feedback/complaint management;
3. efficiency;
4. queue management;
5. accessibility; and
6. customization.

**Online systems quality**

Because e-commerce is a recently emerging field, little academic literature in this field has addressed in-depth online systems quality. However, another line of research, regarding information systems quality in an end-user computing environment, may be used as a good reference for the discussion of the online systems quality. The term “end-user” refers to a user that:
... interacts directly with the application software to enter information or prepare output reports (Doll and Torkzadeh, 1988, p. 266).

In this end-user computing environment, users assume more responsibility for their own applications, while analysts/programmers and operations staffs are less directly involved in user support.

Similarly, when a customer accesses a Web site, the Web site can be considered as an information system and the customer as an end-user of the information system. The Internet-based data processing, thus, can be regarded as an extreme case in an end-user computing environment where the users of Web sites seldom have direct interaction with the operations staffs of the Web sites. In order to measure end-user computing satisfaction, Doll and Torkzadeh (1988) proposed five quality dimensions that influence end-user satisfaction:
1. content;
2. accuracy;
3. format;
4. ease of use; and
5. timeliness.

The evidence for the instrument's reliability and validity was well documented in other studies (e.g. Torkzadeh and Doll, 1991; Hendrickson et al., 1994). These five dimensions could be an integral part of the construct of online systems quality.

Recently, several studies on e-commerce have noted that some features of Web sites are critical to their business success. For example, D'Angelo and Little (1998) argued that factors such as navigational characteristics, visual characteristics, and practical consideration (including images, background, color, sound, video, media, and content) are important considerations in designing a Web site. Lohse and Spiller (1999) noted that online business Web sites' characteristics such as a feedback section and product lists are crucial in generating sales. Liu and Arnett (2000) considered the following four factors as major ingredients for the success of a Web site as:
1. system use;
2. system design quality;
3. information quality; and
4. playfulness,

As for Internet banking, Sathy (1999), with respect to the adoption of Internet banking by Australian consumers, found that two factors such as "difficulty in use" and "security concern" are important reasons that customers do not want to use the service. Jayawardhana and Foley (2000) suggested that the features of Internet banking Web sites, such as:
- the speed to download;
- content;
- design;
- interactivity;
- navigation; and
- security,
are critical to enhancing customer satisfaction.

Banking service product quality

Previous studies have found that banking service product quality plays an important role in determining customers' perceptions of the overall banking service quality. The bank product quality is primarily associated with product variety and diverse features. Strieiter et al. (1999) noted that one of the most important developments in banking is the increased emphasis on marketing a wide array of financial services. Dixon (1999) also argued that the key to getting more customers for the banks through the online service is not the attraction of the Internet itself but the products offered to the customers. This argument was supported by Latimore et al. (2000), who found that 87 percent of Internet banking customers want to make a variety of financial transactions at one site (so-called "one-stop shopping"), including paying their bills electronically and automatically, viewing their monthly bank statements, and purchasing stocks and insurance.

Therefore, it should be noted that since the present banking customers, with the advent of the Internet technology, can have unlimited access to financial information and enjoy a wider range of choices in selecting competitive products and financial institutions than ever before, the subtle "differentiating" quality levels (e.g. diverse features) of bank products and their timely introduction on the marketplace have become a key driving force in attracting new customers and enhancing customers' satisfaction (Mols, 2000).

Research methodology

The critical incident technique (CIT) was utilized in this study to uncover key dimensions of Internet banking service quality as perceived by Internet banking customers and to identify critical, satisfying and dissatisfying factors among the identified dimensions. The CIT is well suited when the purpose of the research is to increase knowledge of a real-world
phenomenon about which relatively little has been documented (Bitner et al., 1990). Particularly, this research method is considered appropriate for discovering and classifying underlying key factors by employing content analysis of stories or “critical incidents” as data (Weber, 1985). However, it should be noted that, in using this research method, reliability and validity problems may arise as a result of the ambiguity of word meanings, category labels, and coding rules in a particular study (Weber, 1985).

A number of online business review Web sites have asked online customers to post their experiences on their Web sites’ bulletin board systems (BBS). The customers who have volunteered to provide such reviews are most likely those who have had extremely satisfying/dissatisfying experiences. The customers who have received average or tolerable products/services from online businesses are likely to find little or no incentive to make such comments. Therefore, the stories of extremely satisfying/dissatisfying experiences posted on the BBS could serve as the critical incidents reported by the online customers.

For this study, the authors collected the critical incidents regarding Internet banking service quality from the Web site of Gomez Advisors (www.Gomez.com), which is one of the leading online consulting firms specializing in e-commerce. The Web site has a BBS for the customers to express their feelings, attitudes, and perceptions about the banking products and services they have received from the Internet banks. These Internet banking customers can be regarded as those who have an arrangement with their bank to get access to their Internet banking services and recently have used at least one of those services. The authors accessed Gomez.com from February 10, 2000 at 7 p.m. to February 11, 2000 at 12 a.m. A total of 704 individual comments on the 49 Internet banks in the USA were collected. Of the 49 banks referred to by the customers, eight firms are Internet-only banks and the remaining 41 firms are the traditional banks offering Internet banking service.

In selecting appropriate critical incidents of service encounter, the authors used the following four criteria, as suggested by Bitner et al. (1990). A critical incident of service encounter should:

- involve customer-firm interactions via online communication tools, such as e-mail, a chat room, BBS, traditional media such as a phone, fax, and mail, and automatic online service systems;
- be very satisfying or dissatisfying from the customer’s point of view;
- be a discrete episode; and
- have sufficient detail.

After deleting the unqualified comments, 532 incidents were obtained for further analysis. These incidents provided rich information regarding customers’ experiences with Internet banking. Many customers described their interactions with the Internet banks in detail. Some of them even provided content of the e-mails exchanged between them and the Internet banks’ employees. Most of the incidents recorded were more than 100 words in length, while the rest were just very short comments on certain aspects of the Internet banking service quality.

The incidents selected were subsequently imported into NUD*IST™ (Richards and Richards, 1994), a software package designed for coding qualitative data. The data coding was conducted by both of the authors. First, the authors jointly identified primary facets (or nodes) of Internet banking service quality and refined them into distinctive quality dimensions by analyzing the first 100 incidents selected. During this process, the authors identified, discussed, and resolved the discrepancy until consensus had been achieved on the derivation of nodes and, subsequently, service quality dimensions. Second, the authors divided the labor in coding the remaining incidents, with one author coding the data while the other acted as an auditor. Auditing included verifying the steps followed by the coder and the outcome of the coding process. The discrepancy between the auditor and the auditee was resolved through further negotiation between them.

A total of 168 single-spaced pages of original data of the critical incidents yielded 45 nodes (see Table I). These nodes were further refined into 17 dimensions: ten dimensions for assessing customer service quality, six for online systems quality, and one for banking products quality (see Table II; for definitions, see Appendix).

The initial 45 nodes listed in Table I are the primary themes or facets of the overall Internet banking service quality, which were elicited from the banking customers’ anecdotes of the selected critical incidents. Some of the incidents fit into several nodes simultaneously. The nodes are not mutually exclusive, and a point brought up by a customer has the potential to be classified in several ways. For example, one customer reported his experience as the following:

[280]
Table I

<table>
<thead>
<tr>
<th>Original categories</th>
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<tbody>
<tr>
<td>1. Correct service</td>
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<tr>
<td>2. Keep service promise</td>
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<tr>
<td>3. Accurate records</td>
</tr>
<tr>
<td>4. Keep promise as advertised</td>
</tr>
<tr>
<td>5. Prompt service</td>
</tr>
<tr>
<td>6. Quickly solve problems</td>
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<tr>
<td>7. Convenient service</td>
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<tr>
<td>8. Ability to solve problems</td>
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<tr>
<td>9. Knowledge to answer questions</td>
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<tr>
<td>10. Address complaints friendly</td>
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<tr>
<td>11. Consistently courteous</td>
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<tr>
<td>12. Confidence in the bank’s service</td>
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<tr>
<td>13. Good reputation</td>
</tr>
<tr>
<td>14. Privacy</td>
</tr>
<tr>
<td>15. Information transaction safety</td>
</tr>
<tr>
<td>16. Availability for help</td>
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<tr>
<td>17. ATM access</td>
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<tr>
<td>18. Phone access</td>
</tr>
<tr>
<td>19. E-mail access</td>
</tr>
<tr>
<td>20. Account access when abroad</td>
</tr>
<tr>
<td>21. Clear answer</td>
</tr>
<tr>
<td>22. Informing customer of important information</td>
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<tr>
<td>23. Availability of status of transactions</td>
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<tr>
<td>24. External collaboration</td>
</tr>
<tr>
<td>25. Internal collaboration</td>
</tr>
<tr>
<td>26. Personal attention</td>
</tr>
<tr>
<td>27. Continuous improvement on online systems</td>
</tr>
<tr>
<td>28. Continuous improvement on banking products</td>
</tr>
<tr>
<td>29. Continuous improvement on customer services</td>
</tr>
<tr>
<td>30. Product range</td>
</tr>
<tr>
<td>31. Product features</td>
</tr>
<tr>
<td>32. Information on products and services online</td>
</tr>
<tr>
<td>33. Other information that customers need</td>
</tr>
<tr>
<td>34. Accurate online transactions</td>
</tr>
<tr>
<td>35. Errors in interface</td>
</tr>
<tr>
<td>36. Errors in contents</td>
</tr>
<tr>
<td>37. Compatibility</td>
</tr>
<tr>
<td>38. User friendly</td>
</tr>
<tr>
<td>39. Easy login</td>
</tr>
<tr>
<td>40. Functions that customers need</td>
</tr>
<tr>
<td>41. Speed of responses</td>
</tr>
<tr>
<td>42. Accessibility of the Web site</td>
</tr>
<tr>
<td>43. Easy navigation</td>
</tr>
<tr>
<td>44. Up-to-date information</td>
</tr>
<tr>
<td>45. Attractiveness of the Web site</td>
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</tbody>
</table>

I signed up for Bank1 two weeks ago because it fit my needs and had very good terms. My impression so far –
THE GOOD – Telephone support is courteous, prompt, always available; Web site works well and is well-documented; Generous interest rates and many freebies.
THE BAD – They managed to misspell my name; Materials arrived in the mail out-of-sequence; I was unable to import Quicken categories to my account and my e-mail to customer service has gone unanswered for several days; It took a phone call to find out that you need a separate ATM card to withdraw cash from each account (Customer comment #21, Bank1).

This statement can be classified in many ways in deriving quality dimensions of the Internet banking service. This comment was originally classified under nine nodes:
1. phone access;
2. consistently courteous;
3. prompt service;
4. product and service information online;
5. correct service;
6. e-mail access;
7. convenient service;
8. accurate information; and
9. compatibility.

Referring to the common attributes from previous studies (Berry et al., 1985; Doll and Torkzadeh, 1988; Johnston, 1997; Jun et al., 1999), the authors discovered a total of six quality attributes: two dimensions for online systems quality:
1. Content (“Web site … is well-documented”).
2. Ease of use (“… I was unable to import Quicken categories to my account …”).

and four dimensions for customer service quality:
1. Access (“… Telephone support is … always available…” “… my e-mail to customer service has gone unanswered for several days …”).
2. Courtesy (“… Telephone support is courteous …”).
3. Responsiveness (“… Telephone support is … prompt …”). “It took a phone call to find out that you need a separate ATM card to withdraw cash from each account …”).
4. Reliability (“… Materials arrived in the mail out-of-sequence …”).

Findings and discussions

The authors’ content analysis on the critical incidents revealed that the construct of “service quality”, in the context of Internet banking, comprises a total of 17 service quality dimensions that can be classified into three broad categories, such as customer service quality, online systems quality, and banking service products quality. Major findings and their implications regarding the identified Internet banking service quality dimensions are discussed in this section.

Dimensions of customer service quality

A total of 10 attributes for customer service quality were identified:
1. reliability;
2. responsiveness;
### Table II
Seventeen dimensions of Internet banking service quality

<table>
<thead>
<tr>
<th>Banking service product quality (1 dimension)</th>
<th>Customer service quality (10 dimensions)</th>
<th>Online systems quality (6 dimensions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <strong>Product variety/diverse features</strong></td>
<td>6. <strong>Access</strong></td>
<td>4. <strong>Timelines</strong></td>
</tr>
<tr>
<td>Product range</td>
<td>Availability for help</td>
<td>Up-to-date information</td>
</tr>
<tr>
<td>Product features</td>
<td>ATM access</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Phone access</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E-mail access</td>
<td></td>
</tr>
<tr>
<td>2. <strong>Responsiveness</strong></td>
<td>7. <strong>Communication</strong></td>
<td>5. <strong>Aesthetics</strong></td>
</tr>
<tr>
<td>Prompt service</td>
<td>Account access when abroad</td>
<td>Attractiveness of the Web site</td>
</tr>
<tr>
<td>Quickly solve problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convenient service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. <strong>Competence</strong></td>
<td>8. <strong>Understanding the customer</strong></td>
<td>6. <strong>Security</strong></td>
</tr>
<tr>
<td>Ability to solve problems</td>
<td>Personal attention</td>
<td>Privacy</td>
</tr>
<tr>
<td>Knowledge to answer questions</td>
<td></td>
<td>Information transaction safety</td>
</tr>
<tr>
<td>4. <strong>Courtesy</strong></td>
<td>9. <strong>Collaboration</strong></td>
<td></td>
</tr>
<tr>
<td>Address complaints friendly</td>
<td>External collaboration</td>
<td></td>
</tr>
<tr>
<td>Consistently courteous</td>
<td>Internal collaboration</td>
<td></td>
</tr>
<tr>
<td>5. <strong>Credibility</strong></td>
<td>10. <strong>Continuous improvement</strong></td>
<td></td>
</tr>
<tr>
<td>Confidence in the bank’s service</td>
<td>Continuous improvement on online systems</td>
<td></td>
</tr>
<tr>
<td>Good reputation</td>
<td>Continuous improvement on banking products</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Continuous improvement on customer services</td>
<td></td>
</tr>
</tbody>
</table>

| 1. **Contents**                             | 2. **Accuracy**                           | 3. **Ease of use**                     |
| Information on products and services online | Accurate online transactions              | Compatibility                          |
| Other information that customer needs       | Errors in interface                       | User friendly                          |
|                                             | Errors in contents                        | Easy login                            |
| 4. **Timelines**                            |                                           | Speed of responses                     |
| Up-to-date information                      |                                           | Accessibility of the Web site          |
| 5. **Aesthetics**                           |                                           | Functions that customers need          |
| Attractiveness of the Web site              |                                           | Easy navigation                        |
| 6. **Security**                             |                                           |                                       |
| Privacy                                     |                                           |                                       |
| Information transaction safety              |                                           |                                       |

3 competence; 4 courtesy; 5 credibility; 6 access; 7 communication; 8 understanding the customer; 9 collaboration; and 10 continuous improvement.

While the first eight dimensions were previously uncovered by Parasuraman *et al.* (1985), the access dimension additionally has its own unique aspects related to Internet banking. First, since the Internet banking services are provided over the Internet, customers, in communicating with their Internet banks, seem to prefer e-mail to traditional communication modes such as telephone or fax. A quick and responsive e-mail service, thus, is a distinct and important facet of the access dimension. For example, one customer has expressed his satisfaction with a quick e-mail reply as the following:

… I e-mailed Bank31 to confirm that there were no hidden service charges. The response was within 90 minutes … I considered that a
reasonable response time . . . (Customer comment #99, Bank31).

In contrast, Internet banking customers tend to be dissatisfied when banks respond to customers’ e-mail inquiries slowly or when they are not as much attentive to customers’ requests. The following anecdote has illustrated this point.

6/28 . . . I send e-mail to customer service requesting assistance. 7/11 Receive cryptic reply of: Date & Time: 07/11/1999 1:35 P.M. Subject: Activate Bill Pay Option, Dear Sir/Madam, I will have your activation done ASAP. Sincerely, Bank31. The “Sir/Madam” is a nice touch . . . 7/20 A response! Date & Time: 07/20/1999 11:10 P.M. Subject: Activate Bill Pay Option, DEAR XXX, YOU CAN NOW USE OUR BILL PAYMENT FEATURE. I DO APOLOGIZE FOR ANY INCONVENIENCE THAT WE MAY HAVE CAUSED. THANK YOU, Bank31. OK – now I’m set . . . or am I? No, still can’t access bill-pay feature. Thanks goodness I kept my current account open! . . . 7/22 I receive the following reply from Bill Payments (whoever he is) From: Bill Payments Date & Time: 07/22/1999 4:40 P.M. Subject: Bill Pay Activated, Dear Ms. XXX, You have been authorized to use the on-line bill payment feature. Please allow 24 hours before using the service. Thank you for your patience. AH . . . another 24 hours? Great. 7/24 Still don’t have my checks for the Money Market Account (received the basic checking checks though printed wrong) (Customer comment #32, Bank31).

A second unique aspect of the access dimension involves the accessibility of ATMs. Some physical banks offering Internet banking service have ATMs only in the US, which is inconvenient for their customers when they are abroad:

The one area where Bank1 clearly lacks is for international availability of funds. The ATM card provides none: all the networks are national ATM networks only. The Bank1’s Membership Banking card is also not accepted as an . . . credit card. So I cannot access my funds if I travel abroad (Customer comment #13, Bank1).

Moreover, in the case of Internet-only banks, since they usually have no or few ATMs, the accessibility of ATMs can become a serious concern for their customers. However, the Internet-only banks can alleviate this problem by reimbursing all or some portion of ATM fees to their customers:

My only complaint is that they do not reimburse for ATM withdrawals at other banks’ ATMs. If they reimbursed only four withdrawals a month, I would not need a local bank for quick cash (Customer comment #7, Bank31).

In regard to the two newly found attributes in this study, the continuous improvement dimension refers to the concept that, to provide the customers with enhanced quality services and meet their constantly changing needs, Internet banks should continuously improve the quality levels of their banking service products, customer service, and online systems. The continuous improvement efforts made by a bank can create a favorable image on the part of its customers that the bank is always taking care of the customers’ changing needs and preferences. Some customers complimented the continuous improvement efforts exerted by the following banks:

Bank3 clearly needs to invest in bringing their site and their tech infrastructure up to date. The good news is that they are making those investments.

The recent facelift on Homebank was pretty good. Performance is still a bit sluggish, but improving (Customer comment #1, Bank3).

I have watched Bank19 from the beginning and have been very impressed with how they listen to what customers want. Originally Bank19 charged for Bill Payment and also did not pay people back for ATM charges. They have since fixed both of these (Customer comment #19, Bank19).

It is interesting to note that some banks show their customers “negative continuous improvement”, e.g. quality levels of their banking services keep deteriorating. The following two anecdotes demonstrate customers’ dissatisfaction caused by the “negative continuous improvement”:

I’ve been with Bank37 almost since the beginning of their bank. Lately, the service has degraded to the point where I am looking for another bank. When they first started, they were very good about notifying you immediately via e-mail if a payment could not go through. Now, the last 5 times in a row I have paid bills, the payments did not go through because of a “communication error” with their payment processing system.

Bank37 no longer notifies you when payments do not go through, even when it is their fault. So you end up getting hit with late fees because scheduled payments are missed frequently . . . I would recommend going elsewhere for your online banking needs (Customer comment #104, Bank37).

. . . I am really disappointed at Bank31, particularly after they “enhance” their Web site. Before the “enhancement”, the site is slow as a turtle. It was terrible . . . but you don’t have banking errors most of the time except timing out while you are trying to do some banking. Now, it is even worse! The banking is not real time. And you will meet errors when you do balance transfer!!! I met this twice. The first, I did a bank transfer, but
they didn’t give me confirmation number. So I guess it didn’t went through, and I did another one.Oops, it turned out that both went through! The 2nd time is even worse! I tried a bank transfer and failed. The system said that they can’t do such transactions!!! (Customer comment #89, Bank31).

Next, the collaboration dimension can be interpreted in two ways: internal and external collaboration. The internal collaboration refers to close cooperation between functional departments and their employees within a bank. In contrast, the external collaboration means that, to provide customers with better services, the Internet bank should effectively organize and integrate all the necessary interactions between itself and its business partners, such as outsourced departments (e.g. some banks outsource their telephone answering service) and credit report companies. Frequently, the lack of external collaboration often leads to a significant delay of service delivery, as shown in the following case:

I’m currently an account holder with Bank37 … Once you apply online, the information does not go directly to Bank37. It goes to Equifax [credit report company] first. After Equifax processes that information it is then sent, the next day, to Bank37. So there is no way that an employee of Bank37 would have your information the next day and be able to call any one and change your information. The only people who would have that information that fast would be an Equifax employee (Customer comment #52, Bank37).

The employees of this bank cannot receive on a real-time basis customers’ input via the Internet, and they cannot process the customers’ requests until their business partners, including credit report companies, complete their contracted jobs. This may create a vacuum for the service delivery and hence lower the customers’ perceived service quality.

The collaboration dimension, thus, is a distinctive determinant that refers to not only integrated and seamless service delivery processes within a bank but also close cooperation between the bank and its business partners. All parties involved in service delivery processes may individually render outstanding services to their respective customers. However, when these forces need to provide certain services together but they act in an uncoordinated fashion, the banking service quality provided by them may greatly suffer.

Dimensions of online systems quality
A total of six dimensions of online systems quality were found in this study:

1 content;
2 accuracy;
3 ease of use;
4 timeliness;
5 aesthetics; and
6 security.

Of those identified dimensions, the first four attributes such as content, accuracy, ease of use, and timeliness were previously uncovered by Doll and Torkzadeh (1988) in their analysis of end-user computing satisfaction, while the remaining two attributes such as aesthetics and security were additionally derived in this study. Although Internet banking customers can be considered as end-users of a certain information system, the interactions between the customers and the banks’ Web sites have their own unique aspects. For example, the ease of use dimension encompasses some unique characteristics that can be attributed to the nature of the Internet. First, the speed of response and easy navigation of the online systems are critical to the success of the Internet banks. Customers frequently complained about the Web site’s slow response time although it might be caused by the traffic jam on a certain part of the Internet. The following two anecdotes highlight the importance of this dimension:

Response time is dreadful for many transactions. Note that every time you go to your account page, they will retrieve data from the server and it is very slow. So, when you then go to another account, you wait another 2 or 3 minutes, you then go back to the previous page and it’s another 2 or 3 minutes. It would actually be quicker for me to drive into town (Customer comment #9, Bank48).

The interface was horrible and would regularly crash my browser … (Customer comment #38, Bank48).

Second, the Internet banking customers usually use certain financial software such as Microsoft Money or Quicken to help them effectively manage their own financial data. If a certain bank’s Web site is not compatible with such software that banking customers are widely using, this bank will become less attractive to the customers. Finally, the Web site of a bank should be compatible with customers’ computers and their Internet browsers. The following customer’s comment depicts the significance of this compatibility issue:

However, they still have an extremely underdeveloped sense of how Internet users tend to be Mac users: I was told quite recently that they have no intention of making the bill paying module in a Mac version. Well, I hope the Windows guys get their $6.95 a month’s
worth. I am seriously thinking of switching to a financial institution that can handle both my banking and brokerage online (Customer comment #1, Bank#1).

As in the case of the “ease of use” dimension, the accuracy dimension also has some unique features related to the Internet. Accurate banking transactions over the Internet have become an important facet that determines the customers’ perceptions of online systems quality. The following two customers’ complaints illustrate the importance of this dimension:

… their bill pay & direct transfer services have given me problems – On two occasions, I haven’t been able to transfer money as scheduled, even though I had all the funds in the account (Customer comment #4, Bank14).

… I paid all of my bills on payday as I always did, but this one occasion the bank’s computers double paid my bills and overdrew my account … (Customer comment #1, Bank18).

Accurate banking transactions require flawless and smooth integration of various components of computers and other information systems (e.g. Web sites and online databases).

Regarding the newly found dimensions, first, aesthetics is related to the concept that an aesthetically appealing Web site would have a positive impact on drawing potential customers’ attention. Next, security tends to be one of the utmost concerns for the Internet banking customers because the insecure Web sites or transactions may pose serious problems against customers. The following customer comment illustrates this point well.

The online customer service is NOT secure. When they ask for account info, I always have them call me. Is there anything that can be done to make it secure? (Customer comment #32, Bank45).

On the other hand, the customers’ satisfaction would be greatly enhanced when the banks are making every effort to protect their customers from potential fraudulent activities:

**Dimension of banking service product quality**

One attribute of banking service product quality was derived: product variety/diverse features. This dimension consists of two aspects:

1. A wide range of products, e.g.: • checking and savings accounts; • CDs; • funds transfer; • bill paying;

   • loans; and
   • credit card services.

2. Diverse product features, e.g.: • an overdraft protection service; and • the wide choices of loan duration.

The Internet banking customers seem to consider this dimension as one of the important considerations in selecting their banks. The following customer comment typically reflects the importance of this dimension.

I am willing to be patient because I like the services they have to offer; the ability to have everything at one place (checking, CDs, money market account, brokerage, and bill pay) … Web site is a little slow, but hopefully as they gain more experience, they will get better (Customer comment #3, Bank11).

**Frequencies of mention for quality dimensions**

The frequency of mention for each of the quality dimensions identified earlier, classified by the Internet bank types, such as the Internet-only banks and traditional banks offering Internet banking service, and by satisfying and dissatisfying factors, is summarized in Table III.

The total frequency of mention for the 17 dimensions, both satisfying and dissatisfying, was 854 (506 in the Internet-only bank group; 348 in the traditional banks offering Internet banking service group), and the total number of anecdotes analyzed was 532. Thus, overall, there was an average of 1.6 (854/532) determinants per anecdote. The total frequency of mention for dissatisfying factors (615) in both bank groups is approximately twice as many as that of satisfying factors (299).

When combining satisfying and dissatisfying factors in both bank groups, the following five dimensions were the most frequently mentioned:

1. responsiveness;
2. reliability;
3. access;
4. ease of use; and
5. accuracy.

These five determinants were clearly predominant, accounting for 77 per cent of the total frequency. The remaining 12 dimensions, including courtesy, understanding the customer, aesthetics, and product variety/diverse features, occupied only 23 per cent. Of the five predominant dimensions, the responsiveness dimension had the highest frequency of mention (199) and appeared to be the most influential satisfying or dissatisfying factor, depending on the performance level of the dimension,
### Table III
Frequency of dimensions of Internet banking service quality

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Internet-only banks</th>
<th>Traditional banks with Internet banking service</th>
<th>All Internet banks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S¹ P²</td>
<td>S D Total</td>
<td>S D Total</td>
</tr>
<tr>
<td></td>
<td>N³ P⁴</td>
<td>N P Total</td>
<td>N P Total</td>
</tr>
<tr>
<td>Customer service quality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reliability</td>
<td>9</td>
<td>5.8 79 22.6 88 17.4 11 13.3 55 20.8 66 19.0</td>
<td>20 8.4 134 21.8 154</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>40</td>
<td>25.6 90 25.7 130 25.7 19 22.9 50 18.9 69 19.8</td>
<td>59 24.7 140 22.8 199</td>
</tr>
<tr>
<td>Competence</td>
<td>11</td>
<td>7.1 16 4.6 27 5.3 2 2.4 5 1.9 7 2.0 13</td>
<td>5.4 21 3.4 34 4.0</td>
</tr>
<tr>
<td>Courtesy</td>
<td>9</td>
<td>5.8 7 2.0 16 3.2 3 3.6 11 4.2 14 4.0 12</td>
<td>5.0 18 2.9 30 3.5</td>
</tr>
<tr>
<td>Credibility</td>
<td>7</td>
<td>4.5 1 0.3 8 1.6 3 3.6 4 1.5 7 2.0 10</td>
<td>4.2 5 0.8 15 1.8</td>
</tr>
<tr>
<td>Access</td>
<td>18</td>
<td>11.5 59 16.9 77 15.2 9 10.8 24 9.1 33 9.5 27</td>
<td>11.3 83 13.5 110 12.9</td>
</tr>
<tr>
<td>Communication</td>
<td>1</td>
<td>0.6 7 2.0 8 1.6 0 0.0 5 1.9 5 1.4 1</td>
<td>0.4 12 2.0 13 1.5</td>
</tr>
<tr>
<td>Understanding the customer</td>
<td>2</td>
<td>1.3 0 0.0 2 0.4 3 3.6 1 0.4 4 1.1 5</td>
<td>2.1 1 0.2 6 0.7</td>
</tr>
<tr>
<td>Collaboration</td>
<td>0</td>
<td>0.0 5 1.4 5 1.0 0 0.0 8 3.0 8 2.3 0</td>
<td>0.0 13 2.1 13 1.5</td>
</tr>
<tr>
<td>Continuous improvement</td>
<td>6</td>
<td>3.8 3 0.9 9 1.8 2 2.4 2 0.8 4 1.1 8</td>
<td>3.3 5 0.8 13 1.5</td>
</tr>
<tr>
<td>Online systems quality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contents</td>
<td>3</td>
<td>1.9 7 2.0 10 2.0 2 2.4 6 2.3 8 2.3 5</td>
<td>2.1 13 2.1 18 2.1</td>
</tr>
<tr>
<td>Accuracy</td>
<td>3</td>
<td>1.9 22 6.3 25 4.9 2 2.4 17 6.4 19 5.5 5</td>
<td>2.1 39 6.3 44 5.2</td>
</tr>
<tr>
<td>Ease of use</td>
<td>28</td>
<td>17.9 44 12.6 72 14.2 21 25.3 61 23.0 82 23.6 49</td>
<td>20.5 105 17.1 154 18.0</td>
</tr>
<tr>
<td>Timeliness</td>
<td>8</td>
<td>5.1 5 1.4 13 2.6 2 2.4 15 5.7 17 4.9 10</td>
<td>4.2 20 3.3 30 3.5</td>
</tr>
<tr>
<td>Aesthetics</td>
<td>3</td>
<td>1.9 1 0.3 4 0.8 1 1.2 0 0.0 1 0.3 4</td>
<td>1.7 1 0.2 5 0.6</td>
</tr>
<tr>
<td>Security</td>
<td>0</td>
<td>0.0 3 0.9 3 0.6 0 0.0 0 0.0 0 0.0 0</td>
<td>0.0 3 0.5 3 0.4</td>
</tr>
<tr>
<td>Banking products quality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product variety/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>diverse features</td>
<td>8</td>
<td>5.1 1 0.3 9 1.8 3 3.6 1 0.4 4 1.1 11</td>
<td>4.6 2 0.3 13 1.5</td>
</tr>
<tr>
<td>Sum</td>
<td>156</td>
<td>100 350 100 506 100 83 100 265 100 348 100</td>
<td>239 100 615 100 854 100</td>
</tr>
</tbody>
</table>

Notes:
1. S: satisfiers
2. D: dissatisfiers
3. N: number
4. P: percentages
e.g. the speed and timeliness of service deliveries. This finding is consistent with Johnston (1995), although he investigated service quality attributes in the context of traditional, “brick-and-mortar” retail banking industry. Next, the reliability and the ease of use dimensions were a tie and had the second highest frequency of mention (154), followed by access (110), and accuracy (44). It is interesting to note that the ease of use dimension is related to online systems quality rather than customer service quality. This finding indicates that, for example, the easy navigation of a bank’s Web site can greatly influence customers’ satisfaction and the lack of those attributes are the main sources of dissatisfaction.

In the case of Internet-only banks group, the most frequently mentioned sources of satisfaction were in the following dimensions:

- responsiveness;
- ease of use;
- access; and
- competence.

On the other hand, the following six attributes were the most often mentioned sources of dissatisfaction:

1. responsiveness;
2. reliability;
3. access;
4. ease of use;
5. accuracy; and
6. competence.

 Particularly, the four dimensions commonly found in both satisfying and dissatisfying groups, such as responsiveness, access, competence, and ease of use, seemed to have strong effects on both satisfaction and dissatisfaction. In addition, the reliability and accuracy dimension appeared to be the key source of dissatisfaction but not of satisfaction.

Concerning the traditional banks offering Internet banking service, the top four satisfiers turned out to be the same as those of dissatisfiers, though the ordering was different. Those attributes were:

1. ease of use;
2. responsiveness;
3. reliability; and
4. access.

This finding indicates that the four dimensions tend to be the main sources of either satisfaction or dissatisfaction, depending on the performance levels on those attributes.

Although some dimensions appeared to have little impact on the perceived Internet banking service quality, they exclusively affected either satisfaction or dissatisfaction. In the case of the Internet-only banks group, there were three exclusive determinants of satisfaction or dissatisfaction:

1. understanding the customer (satisfaction);
2. collaboration (dissatisfaction); and
3. security (dissatisfaction).

On the other hand, in the traditional banks offering an Internet banking service group, there were three exclusive dimensions of satisfaction or dissatisfaction:

1. communication (dissatisfaction);
2. collaboration (dissatisfaction); and
3. aesthetics (satisfaction).

Overall, it appears that few discrepancies exist between the two groups of Internet banks, regarding the most frequently mentioned sources of both satisfaction and dissatisfaction.

### Conclusions and implications

The implementation of quality initiatives should begin with defining customers’ needs and preferences, and their related quality dimensions. Identification and measurement of customers’ expectations of the Internet banking services provide a frame of reference for banks’ assessment of their service quality. Management’s first step in planning quality enhancement programs, then, is to listen to the customers. Unfortunately, the service quality dimensions and their related quality improvement approaches, developed in the traditional banking environment, cannot be an appropriate set of guidelines for effectively managing Internet banking service quality. The reason is that the Internet banks, unlike the traditional banks, seldom have interpersonal interaction with their customers in their banking service delivery process.

This study attempted to extensively identify key quality attributes of the Internet banking products and services by analyzing Internet banking customers’ comments on their banking experiences. A total of 17 dimensions were identified under the three categories of Internet banking service quality:

1. customer service quality;
2. online systems quality; and
3. banking service product quality.

Those 17 dimensions include:

- **Customer service quality**:
  - reliability;
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The key determinants of Internet banking service quality: a content analysis

• responsiveness;
• competence;
• courtesy;
• credibility;
• access;
• communication;
• understanding the customer;
• collaboration; and
• continuous improvement.

2 Online systems quality:
• content;
• accuracy;
• ease of use;
• timeliness;
• aesthetics; and
• security;

3 Banking service product quality: one dimension of product variety/diverse features.

Obviously, in order to maintain a high level of the overall banking service quality, the Internet banks should pay attention to all 17 dimensions identified in this study. However, to strengthen competitiveness in the extremely competitive market given limited organizational resources, it is recommended that Internet banks, both Internet-only banks and traditional banks offering Internet banking service, focus more on the following key dimensions:

1 Customer service quality:
• responsiveness;
• reliability; and
• access;

2 Online systems quality:
• ease of use;
• accuracy; and

3 Banking service product quality:
• product variety/diverse features.

All of the six dimensions tend to have strong impacts on either customers’ satisfaction or dissatisfaction, depending on the quality performance of those dimensions.

More specifically, first, the Internet banks should perform the promised service dependably and accurately. The Internet banks’ customers frequently complained about the unreliable banking services. For example, some customers commented that their banks did not provide banking services in the same way as advertised on their banks’ Web sites. This type of service failure might be caused by either unreliable banking services or miscommunication between the customers and the service providers regarding terms and conditions. The chance of miscommunication occurrence tends to be even higher in the Internet-only banks than in the traditional banks offering Internet banking service, because the customers of Internet-only banks seldom have a chance to interact directly, face-to-face with their service providers. Second, since e-mail is becoming an important communication means between the Internet banks and their customers, a prompt and attentive e-mail response to a customer’s e-mail inquiry is becoming more critical than ever before to improve the quality levels of, particularly, the access and responsiveness dimensions. Third, the banks are required to keep increasing the speed of online systems’ responses to customers’ input, upgrading the Web sites’ navigational functions, and improving the compatibility of their online systems with customers’ application software as well as hardware.

Fourth, in establishing long-term relationships with their customers, the Internet banks, particularly Web-only banks, face their own unique set of challenges to overcome in competition with the traditional banks, since the Internet banks use the Internet as both a primary communication channel and a service delivery medium, and, thus, they have very limited capacity for direct personal interaction, through which the traditional banks understand and meet their individual customers’ unique needs and, in turn, establish long-term customer relationships. However, as argued by Kolesar and Galbraith (2000), the Internet banks can also create a “bond” with their customers over time if they consistently provide high quality services to them with a particular attention to such dimensions as responsiveness, reliability, credibility, and understanding the customers. Furthermore, as noted by Ghosh (1998) and Mols (2000), the Internet banks can offer personalized services to their customers in order to build customer loyalty, since they can automatically track, through the Internet, individual customers’ financial service usage and gather the information in their integrated database.

Fifth, as argued by Strietert et al. (1999) and Latimore et al. (2000), since many customers want to make a variety of financial transactions at one site, the Internet banks need to provide a wide array of service products and features to them. In doing so, as suggested by Strietert et al. (1999), the banks may need to appoint a single person (or a group of people) as a product manager (or a product management team) to lead their wide organizational efforts to meet the financial needs of various target customer groups by continuously improving existing products and developing new products. Finally, although the security dimension received
only few mentions, it is worthwhile to note that the breach of security may pose
tremendous threats to the success of the
Internet banks, particularly Internet-only
banks. Since the Internet is an open network,
the Internet banking customers appear to be
much more concerned with the security of
their banking transactions and the privacy of
their personal information than do the
traditional banking customers. Therefore,
the Internet banks should do their best to
ensure the security of their customers’
personal information and banking
transactions.

In addition, it should be noted that even
though the price of banking service products,
such as interest rates on interest-bearing
accounts or loans, and service fees, cannot be
considered as one of the banking service
quality dimensions, many customers
emphasized the importance of the price of
bank products by making comments similar
to the following:
The best thing about the bank X . . . good
interest rates, no fees, free checks, and
refunding ATM fees . . . .
The strategic importance of pricing is also
supported by recent research conducted by
one consulting company, which reported that
45 per cent of online customers cited rates and
fees as the initial reason that they decided to
bank online (Lattimore et al., 2000). Therefore,
since the Internet banking system has made
the financial market more transparent and
has helped the customers switch their banks
with minimal costs, the Internet banks should
make every effort to continually and in a
timely way, introduce highly competitive
prices of their bank products to enlarge their
customer base. In fact, many US virtual banks
have offered higher interest rates on interest
checking, CDs, and money market accounts
and lower fees than traditional banks (Rose,
2000), based on their significantly lower cost
structure than those of their counterparts
(Sathye, 1999).

References
valid measurement scale for the perceived
service quality of banks”, International
Journal of Bank Marketing, Vol. 18 No. 2,
pp. 84-91.
Berry, L.L., Zeithaml, V.A. and Parasuraman, A.
(1985), “Quality counts in service, too”,
Bitner, M.J., Booms, B.H. and Tetreault, M.S.
(1990), “The service encounter: diagnosing
favorable and unfavorable incidents”,
and satisfaction with health care delivery,”
Health Care Management Review, Vol. 19 No. 4,
pp. 49-55.
people: TQM, service quality, and human
resources”, Personnel Review, Vol. 24 No. 7,
pp. 25-40.
service quality: a reexamination and
extension”, Journal of Marketing, Vol. 56,
pp. 55-68.
Web pages: what are they and do they exist?”,
Information Technology and Libraries, June,
pp. 71-81.
tips for putting your bank online”, America’s
Community Banker, Vol. 8 No. 6, pp. 12-15.
measurement of end-user computing
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Further reading


Appendix. Definitions of the identified 17 dimensions

1. Reliability: the ability of the Internet bank to perform the promised service dependably and accurately (partly adapted from Zeithaml et al., 1990).
2. Responsiveness: speed, timeliness, and convenience of service delivery (partly adapted from Johnston, 1997).
3. Competence: possession of the required skills and knowledge to perform the service (partly adapted from Zeithaml et al., 1990).
4. Courtesy: the politeness, respect, and propriety shown by the service, usually contact staff and e-mails, in dealing with the customer and his/her property (partly adapted from Zeithaml et al., 1990 and Johnston, 1997).
5. Credibility: trustworthiness, believability, and honesty of the Internet bank (partly adapted from Zeithaml et al., 1990).
6. Access: approachability and ease of contact of service (partly adapted from Zeithaml et al., 1990).
7. Communication: keeping customers informed of the information they need in language they can understand (partly adapted from Zeithaml et al., 1990).
8. Understanding the customer: making the effort to know customers and their needs (partly adapted from Zeithaml et al., 1990).
9. Collaboration: coordination between functional departments and their employees, and between an Internet bank and its business partners to deliver timely and reliable services to the customers.
10. Continuous improvement: continuous improvement of the quality levels of bank products, customer services, and online systems.
11. Contents: providing the customers with information they need through the bank’s Web site [1].
12. Accuracy: making the contents and interface of the bank’s Web site, and online transactions free of error (partly adapted from Doll and Torkzadeh, 1988).
13. Ease of use: convenience for the customers to interact with the bank through the Internet (partly adapted from Doll and Torkzadeh, 1988).
14. Timeliness: the ability of the bank’s Web site to provide customers with up-to-date information (partly adapted from Doll and Torkzadeh, 1988).
17. Product variety/diverse features: the width of product range and the variety of product features.