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eTax Filing & Service Quality: The Case of the Revenue Online Service

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***Abstract*—**This paper describes an ongoing study into the quality of service provided by the Irish Revenue Commisioners' online tax filing and collection system. The Irish Revenue On-Line Service (ROS) site has won several awards. In this study, a version of the widely use SERVQUAL measuring instrument, adapted for use with online services, has been modified for the specific case of ROS. In this paper, the theory behind this instrument is set out, the particular problems of evaluating revenue collecting online are examined and the rationale for this approach is explained.

***Keywords*—**e-service quality, revenue online system, online tax filing system.

I. Introduction

IN benchmarking studies of e-government, one of the areas which is most developed, both in terms of availability and sophistication is revenue collection [1; 12]. Ireland is no exception. The Revenue Commissioners in Ireland were pioneers in the deployment of information technology in the Irish public sector and, in many ways, they have maintained that leadership position for four decades. With the emergence of e-government, the use of information and communications technology in the public sector has turned from being inward looking and administration-focused to outward looking and service-focused.

One aspect of this development in Ireland has been the Revenue Online Service (ROS), an online service for tax filing. Online revenue collection offers many potential benefits to the state from faster collection to error reduction and administrative cost savings. On the other hand, making tax returns and paying taxes is mandatory. The purpose of ROS and similar services in other countries is not, as it might be for other services, to attract more customers. To be effective, online tax services need to be attractive to citizens. While the online delivery of a government service may appear to be more user-friendly than that delivered by traditional means, the Information Society Commission report [21] repeatedly emphasizes that those charged with implementing e-government need to give careful consideration to the perceptions and expectations of its users. This is particularly true in the case of revenue collection where a manual filing may result in a slower payment cycle or cause less concerns about confidentiality. This emphasis on user perceptions and expectations is justified as perceived service quality has become a critical determinant of website success. However, studies show that many consumers view the service quality delivered through commercial websites as unsatisfactory [18; 24] and there is no evidence to suggest that citizens' view of e-government service quality differs. Accenture [1, page 4] comment that:

"While governments have certainly seen some value in terms of increases in citizen satisfaction and internal efficiency and some reductions in costs, none has been transformed by eGovernment alone. eGovernment simply has not led to the reinvention of service delivery".

It is therefore important that government bodies seeking to encourage citizens to use their online services understand the dimensions of website service excellence that their citizens value as this has the potential to improve the uptake of services and increase citizen satisfaction with public administration.

This paper described a current research project being undertaken with the Irish Revenue Commissioners to evaluate the quality of the ROS service quality.

II. Revenue Online Service

Over the past decade, governments, world-wide, have invested heavily in e-government services. The scale of this investment can be gauged from the various benchmarking reports on e-government [e.g. 1; 12]. Having invested in this technology, governments are naturally interested in both the level and the nature of the use of online services made by citizens and business and they have employed a variety of instruments to try to measure this, from crude hit rate counts to citizen surveys.

While there are differences from country to country, there is a core group of services that are available online in most countries measured in the aforementioned benchmarks. These range from registration services (birth, car, company) to licence/document applications (driver, dog, passport) and tax and social welfare services. As already noted, when looking at progress to date, it is not surprising to find that the aspect of e-government which tends to be most developed and most widely used is online tax filing. According to the US Internal Revenue Service, 68 million taxpayers filed online in 2005 and this number is expected to exceed 70 million (out of 135 million returns) in 2006 [20]. This is part of a long tradition. In many countries, including Ireland, the tax authorities have tended to be at or near the leading edge of IT application in the public sector for several decades, so it is not surprising that with the move to online services, they would be one of the first movers. In 1993, the Irish Revenue Commissioners (hereafter simply referred to as Revenue) launched a major overhaul of their IT strategy and architecture. This process

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was expected to take up to ten years (arguably it is still continuing). The provision of online tax services, entitled Revenue Online Service (ROS), was initiated as a separate project in 2000 [33]. ROS was set up in a separate physical location and given its own budget and staff. The initial target market for ROS was the business sector, the self-employed and certain taxes such as value-added tax (VAT). The large, pay-as-you-earn (PAYE) sector was not included, in part because of the high cost of digital certificates at the time and in part because, *inter alia*, of the relatively limited penetration of PCs and Internet access in the customer base. It is anticipated that some on-line PAYE services will be introduced this year [32].

The design of an online tax filing system must address a number of specific challenges that do not usually apply in other online government service applications. Two that are paramount are a high level of security and the ability to handle large peaks in traffic and processing. Taxation is, by its nature, a complicated subject and most businesses as well as many self employed individuals and even PAYE employees use intermediaries, such as accountants, to complete and file their tax returns. An online system must inevitably reflect these complexities. At the same time, any such system has to be sufficiently clear and simple to use that an ordinary tax payer, who might not have a high degree of computer literacy, can complete and file their taxes without undue difficulty. The ROS website and service had been one of the notable successes of Irish e-government and has won a number of awards [32, page 39]. If, as suggested above, usage rates are an important measure of success, then ROS has been highly effective with 53% of self-assessment taxpayers using the system in 2003 and a total of €8.3 billion of revenue being collected via the system [32]. Furthermore, ROS reports significant savings of €600,000 in postage and 30 man-years per annum in processing effort [1].

This study currently being undertaken has three objectives. Firstly, it examines the dimensions of website service quality that are valued by Irish citizens who use the revenue online service to file their tax returns. Secondly, it examines the degree to which website service excellence influences consumer trust in electronic government. Thirdly, by applying the newly operationalised e-S-QUAL measurement instrument, it explores the relevance of this instrument in the evaluation of e-government website service quality.

III. Service Quality

Service quality in is one of the most researched topics in the area of service marketing. Although research into the dimensions of website service quality that are valued by online consumers is in an embryonic stage, it is an issue of considerable importance. In part, this is due to the fact that as competition for online consumers intensifies, service quality has become a key differentiator for online vendors and thus it has become increasingly important to have an appropriate means by which to measure it. This is particularly true in the business to consumer electronic commerce marketplace where web vendors compete for a limited number of consumers and where consumer loyalty has become a key indicator of success.

Service quality has been defined as the difference between customers' expectations for service performance prior to the service encounter and their perceptions of the service received [4]. When performance does not meet expectations, quality is judged as low and when performance exceeds expectations, the evaluation of quality increases. Thus, in any evaluation of service quality, customers' expectations are key to that evaluation. Moreover, Asubonteng *et al.*, [4] suggest that as service quality increases, satisfaction with the service and intentions to reuse the service increase.

Meeting customer service requirements is both a performance issue (i.e. whether the service satisfies the customers requirements) and an issue of conformity to measurable standards. For example, Swartz and Brown [35] distinguish between the consumer's post-performance evaluation of 'what' the service delivers and the consumer's evaluation of the service during delivery. The former evaluation has been termed 'outcome quality' [30], 'technical quality' [19] and 'physical quality' [23]. The latter evaluation has been termed 'process quality' by Parasuraman *et al.*, [30], 'functional quality' by Gronröos [19] and 'interaction quality' by Lehtinen and Lehtinen [23].

The most frequently cited measure of service quality is SERVQUAL, an instrument developed by Parasuraman *et al.*, [29; 30]). It has been widely cited in the literature and has been used to measure service quality in a variety of settings e.g. health care [6; 8; 10], large retail chains [37; 17], fast food restaurants [16], a dental clinic, a tyre store and a hospital [13]. Designed to measure service quality from a customer perspective, it consists of five basic dimensions that represent the service attributes that consumers use to evaluate service quality. The five dimensions are tangibles, reliability, responsiveness, assurance and empathy. As already noted, in their model, Parasuraman *et al.*, [29; 30] suggest that it is the gap between consumer expectations with actual service performance that informs service quality perceptions. Thus, it is this performance-to-expectations gap that forms the theoretical basis of SERVQUAL. However, Parasuraman *et al.*, also note that the evaluation of service quality is not based solely on the service outcome but also involves evaluations of the process of service delivery.

Despite its popularity, a number of issues related to the use of SERVQUAL remain contentious, such as the proposed causal link between service quality and satisfaction [41; 9], and the question as to whether one scale can be universally applicable in measuring service quality regardless of the industry or environment [4; 15; 16; 37; 14; 17]. Moreover, although it remains the dominant model for both researchers and managers, its claimed universality and applicability is made even more questionable by viewing the numerous modifications that are evident in many studies that purport to use this model [31].

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IV. Website Service Quality

Website service quality, frequently termed e-service quality, has been defined as "consumers' overall evaluation and judgement of the excellence and quality of e-service offerings in the virtual marketplace" [34] and "as the extent to which a website facilitates efficient and effective shopping, purchasing and delivery" [44]. E-service quality is constantly evolving due to the pace of competition and the ease of duplicating service features in the online world [38]. Notwithstanding evidence of continuing consumer dissatisfaction with service delivered through the Internet [18; 2], studies of e-service quality remain limited and frequently employ instruments that were developed for use in a traditional environment such as the SERVQUAL survey instrument. For example, researchers [39] have used SERVQUAL to examine the quality factors perceived as important in relation to the use of websites, despite the fact that it was not designed to measure perceived service quality in an online environment and its applicability is therefore unlikely to extend to that context. While it is true that past conceptualisations can be useful platforms for describing e-services [40], there is an increasing awareness [11; 25] that the SERVQUAL instrument is limited in terms of its ability to measure e-service quality, particularly as there are dimensions of service quality that are unique to the electronic context. Moreover, Cox and Dale [14] argue that dimensions of service quality specific to a traditional environment such as competence, courtesy, cleanliness, comfort, and friendliness are not salient in the electronic retail environment while such dimensions as accessibility, communication, credibility, and appearance are of critical importance in an on-line environment. Support for inclusion of specific dimensions unique to the on-line retail environment is also provided by Long and McMellon [27] who argue that factors such as geographic distance and the facelessness of the experience form part of the online service experience and therefore should be part of any e-service quality measurement instrument.

Despite the fact that several researchers have proposed scales to evaluate websites, many of these scales do not provide a comprehensive evaluation of the service quality of the website. For example, the objective of the WebQual scale (Loiacono *et al.*, 2000) is to provide website designers with information regarding the website (e.g. informational fit to task) rather than to provide specific service quality measures from a customer perspective. Other scales such as Barnes and Vidgen's [7] WebQual[1] scale provide a transaction-specific assessment rather than a detailed service quality assessment of a website. The SITEQUAL [43] scale excludes dimensions central to the evaluation of website service quality as does Szymanski and Hise's [36] study, while other researchers [28] have expressed caution regarding the consistency and appropriateness of dimensions used in the eTailQ scale proposed by Wolfinbarger and Gilly [41].

Recently however, many of these concerns have been addressed by the original authors of the SERVQUAL instrument through the development and operationalisation of a multi-item scale for examining website service quality [28]. This scale, termed E-S-QUAL, is a four-dimensional, 22-item scale that captures the critical dimensions of service quality outlined in the extant literature. The dimensions are efficiency, fulfilment, system availability, and privacy. The scale has an accompanying subscale called E-RecS-Qual which contains items focused on handling service problems and is relevant to customers who have had non-routine recovery service encounters with the website. E-RecS-Qual consists of a three-dimensional, 11 item scale. These three dimensions comprise responsiveness, compensation, and contact. Both scales, whose specific purpose is the measurement of website service quality, have been subjected to reliability and validity tests and demonstrate good psychometric properties.

As E-S-QUAL is a relatively new measure it has not been used extensively in online service quality research. However, Kim *et al.*, [22] have recently utilised the measure in the context of online apparel retailers. By using this measure, they were able to successfully identify the exact e-service dimensions on which online apparel retailers are failing and thus identify the key factors that contribute to customer dissatisfaction. Such insights are of enormous value as they provide apparel retailers with the knowledge necessary to improve their service, resulting in increased customer satisfaction, increased sales and higher customer profitability.

V. Research Methodology

Having reviewed the relevant literature, the decision was taken to employ the E-S-QUAL questionnaire [28] using a web-based format. The survey was divided into two sections. In Section 1 a varying number of questions were asked regarding specific dimensions of online service quality as identified by Parasuraman *et al.* These dimensions and the number of items used to represent them are outlined in Table I.

TABLE I
Quality dimensions Measured by the Survey

Quality Dimension
Efficiency
System availability
Fulfilment
Privacy
Responsiveness
Efficiency
Compensation
Contact
Perceived value
Loyalty intentions

[1] Unfortunately both of these WebQual instruments have the same name but they are different.

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In addition, the Revenue Service requested that a number of statements be added to the survey in order to focus more narrowly on specific aspects of their service. An example of this is the statement that the ROS website *"enables me to complete the filing of my tax returns quickly"*. Statements on the influence of each service quality dimension on citizens' trust beliefs were also included. For example, in relation to the dimension of website efficiency, citizen's were asked to agree or disagree with the statement *"The ease of use of a website increases my trust in the on-line vendor."* The purpose of these questions was to investigate which dimension of website service quality provides the strongest influence on citizens' trust in Revenue Online Service. In total, section 1 of the survey contained 31 statements. Section 2 of the survey collected demographic information.

In order to administer the questionnaire, the Revenue Online Service emailed citizens who file their tax returns online informing them of the study and inviting their participation. The email contained a direct link that directed the citizen to the online questionnaire. At the time of writing, the survey is live on the web and data is being collected. The response rate is high and rising. When the data collection period is completed, it is proposed to input the data from both surveys into SPSS and to analyse the results.

VI. Conclusion

This paper has outlined an in-progress study that aims to improve the delivery of electronic government in Ireland. The findings will provide the Irish Revenue Online Service with insight into the key dimensions of service that are valued by Irish citizens who use their online service to file their tax returns. It will provide evidence that Irish citizens' perception of online revenue service quality is driven or inhibited by specific factors, all of which it is possible to manage. Second, it shows the degree to which specific dimensions of service quality engender, or in their absence inhibit, citizen trust in the Revenue Online Service. Finally, it indicates the applicability of the SERVQUAL survey instrument to improving our understanding of the e-government service environment. These contributions will improve both practitioners and researchers understanding of the factors that contribute towards the creation and maintenance of quality e-government services and consequently influence citizen trust and satisfaction with e-government interactions.

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