TOWARDS UNDERSTANDING AND MANAGING FUNCTIONAL SERVICE QUALITY: SMALL ISP SCENARIO IN AUSTRALIA

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ABSTRACT:

The Australian ISP Industry has changed dramatically over the last few years. Large internet environments are increasing the complexity in network service management. Small ISP’s have to overcome several key challenges that include lack of good quality service/solutions, lack of ability to cope with varying customer demands and lack of flexibility in providing services. In this paper the importance of functional service quality is emphasized in Internet Service Provider (ISP) sector. Several key issues that confront small ISP’s in Australia are highlighted. This was done through a combination of expert interview and looking at the ISP industry reports. This paper argues that there is a need for a knowledge base which can assist ISP’s in making business decisions by efficiently understanding and managing service quality data.

KeyWords: Small ISP, Functional quality, ISP Mergers, SERVQUAL model

1. INTRODUCTION TO INTERNET SERVICE ENVIRONMENT AND COMPETITION

Large Internet environments are increasing the difficulty of network management. This has major impact on meeting customer expectations. In the current competitive market it is essential for the Internet Service Providers (ISP) to meet customer expectations and win their confidence in order to stay in business. This is no longer an advantage but has become a necessity. ISP’s are forced to overcome major challenges like (i) lack of provision of good quality service (solutions), (ii) lack of ability to cope with varying customer demands and expectations, (iii) lack of flexibility in providing services (Clark 1998). Failure to cope with these problems results in poor customer satisfaction. Several lessons have been learnt from the recent decrease in number of service providers in Australia (ABS 2005). Additional contributing factors include recent mergers and takeovers. Many issues surrounded the case where ISP (or) groups of ISP are merged (or) were taken over- this certainly a function of customer satisfaction and requires further investigation (Communication 2000). Competitive advantage is gained through value chain concept that helps to develop strategies in the areas of service differentiation (Eric, Gabrielle and Hans 2001). The functional value chain is associated with infrastructure (IP transport) and intermediary services (email, intranet, content delivery and web hosting). A successful strategy that can be used by small ISP’s is to offer customized services to specific groups of customers. This strategy will work very well for residential customers as they heavily rely on help desk support. This approach also indicates to customers that ISP is
being close to the customer and caring for them (empathy). There are several factors surrounding mergers and takeovers of ISP’s: understanding the nature of ISP, size of ISP, economies of scale, opportunities for co-existence with big players (Eric, Gabrielle and Hans 2001). ISP classification in this paper is based on subscriber base and this is defined by Australian Bureau of Statistics (ABS, 2005).

Small ISP’s typically service 101-1000 subscribers. Technical and functional service are two main service quality dimensions provided by ISP’s to their customers. Technical service in ISP environment relates more towards optimizing the network and its performance, whereas functional service is one that is evaluated while service is being provided to customers by their ISP’s and places more importance to the service execution process (optimizing the determinants of service quality and customer satisfaction). Study context is shown in the diagram below.

**4. ISP LITERATURE AND FUNCTIONAL ISSUES SURROUNDING THEM**

**Issue 1: Stiff Competition from peers:** many small ISP’s face a situation of being swallowed up by their peers unless they move up the value chain and offer more than dial-up, email and web hosting services. There is a stiff competition for small ISP’s from Telco’s computer companies and system integrators who attract their customers. Small ISP’s will face identity crisis if mergers and acquisitions continue and when financial conditions tighten. **Issue 2: Diversity of services and nature of business:** there are major impediments with fast internet access technologies as infrastructure is very important and access to premium content, application, serviceability remains key to survival (much greater level of technical expertise and diversity of services) (Keith 2001). Large ISP’s are shifting their focus from the home office and consumer to small and high value business. **Issue 3: Service provisioning:** more non-telecommunication services are provided on the back end of ISP’s who are seen as bottom layer infrastructure provider of the model. Application provider, content provider, business process support
from many companies like IBM are at the top of the layer. ISP forms the basic layer of XSP provider model. Flexible service provisioning based on specific customer resources needs has always been a challenge for small ISP’s (optimal business model). Issue 4: Employee motivation and Incentives: In ISP service model ISP employees play a very important role. This includes employee perception and commitment, resource allocation and employee retention (TIO, 2002). Supervisory focus and control should be exercised and employees rewarded and motivated. Issue 5: Service differentiation: A successful ISP business strategy should highlight the service quality differentiation. Large ISP’s, have the infrastructure and financial resources to swallow up smaller ISP’s. Shakeout in ISP numbers is due to failure to come up with viable business model (Tschol, 1997). The increase trend in number of small ISP category (ABS, 2005) is due to emergence of ISP’s dedicated to specific industry type (regional, national) (Eric, Gabrielle and Hans 2001). Issue 6: ISP Service Efficiency (Internal and External Efficiency) and Quality: Internal efficiency in ISP is related to service productivity while external efficiency relates to customer perception of ISP service quality. Some key elements to be considered are: Service operability performance, Serveability performance, Service integrity performance, and Support service performance. Three dimensions of service quality consisted of material, facilities and personnel (Clark 1998). Service quality also consisted of equipment (physical quality), image of company (corporate quality) and interaction between contact personnel and customer (interactive quality) (Babin, 1998) (Sant 1997). For Expert interview on ISP business survival questions and answers refer to (Nagarajan 2005).

4.1 Unique Selling Proposition strategy (USP) used by Small ISP:
Creating Market focused value proposition: Many new small ISP’s need to understand market segments, customer expectations and combination of service attributes customers prefer most when selecting ISP. Identifying gaps that exist in a market that can support a new ISP and help them to address these gaps and come up with USP (deliver benefits the customer wants and to do it better than competitors). Customer satisfaction variables of importance are response time, technical support, pricing and payment schemes, service responsiveness, ISP CD kit (ease of installation), user friendliness of software. This leads to higher satisfaction and lower switching behavior. Small ISP should identify in what way their
services are unique and better compared to other ISP’s. To do this it is important to understand what customer needs in market place are not fulfilled by their competitors. It is important to identify current service quality issues that customers of other providers face such as: busy signals, slow signals, lack of expert technical support, customers are embarrassed to call ISP’s (technical support staff attitude towards new internet users), ISP response to phone and email queries is poor, no flexibility in pricing plan and payment options, ISP owners running business for first time and lack maturity and good business practices, ISP can’t afford best network hardware and software that results in high % of network downtime for many subscribers (Jonathan, 2000). USP should be something that can be delivered. Over promising and under delivering can lead to high percentage of dissatisfied customers (ACA 2004).

4.2 ISP Connectivity options and Customer convenience
Majority of customers used the call center support facilities offered by ISP (ServiceTrac, 2000). Customers should be given an opportunity to talk with decision makers. This is one of the factors that help ISP’s to retain their customers (Whirlpool 2003). In recent survey taken by whirlpool, the largest broadband community forum in Australia, many respondents (67.95%) indicated that the government did not do enough to promote broadband. Of the respondents, bigpond cable customers (74.2%), optus cable (63.3%), complained that they were not happy about their broadband contract as ISP’s had the authority to change contract conditions at any time (Whirlpool 2003). Customers view reliability as most critical dimension. Many studies conducted by providers (Jonathan 2000) identified the dimension responsiveness as another important dimension. Thus service quality is much more than just measuring and monitoring. Providers should anticipate and also respond to customer queries/complaints. Customers should fit in the heart of service quality management system. Customers interact with service providers and are an integral part of the service production. Quality improvements cannot be solely achieved by modernizing network equipment. A well engineered service provider network providing network services to users can still encounter problems in terms of business profitability, customer loyalty and retention if users perceive poor service quality of carriers as they do not provide necessary support needed to use the ISP services.
4.3 High-end service key to small ISP survival:
In this broadband era small ISP’s that can survive are those that provide value added services to business and residential customers. If small ISP’s lower the prices then they lose revenue, if they don’t then customers switch to cheaper services provided by other provider. Small ISP’s should upgrade their service offering frequently and look out for possible mergers. In order to increase its subscriber base, a continuous face-lift is required. This includes trying to expand their service strategy to different categories of customers such as business and residential customers. This ensures an effective business centered strategy. Many small ISP’s can also gain competitive advantage by providing unique support services to their customers. One such example might include support for Mac’s when many ISP’s provide support for windows operating system (Communication 2000). Telecommunications Industry Ombudsman (TIO 2002) provides alternate dispute resolution schemes and also ensures that it is transparent, simple and inexpensive. Small ISP’s do not see such schemes being very helpful to them for the fear of encouragement provided to customer to make unfair claims which in turn is perceived as a shift in the balance of power in favor of the customer (TIO, 2002).

4.4 Understanding the service trends and the relationship between reseller and small ISP
Small ISP’s should understand the service trends followed by value added reseller in order to gain competitive advantage over them. Value added reseller (VAR) add ISP services to their offering and also partner with existing ISP’s. Value added services are secondary ISP’s who provide complete networked business solutions (internet technology) to their business clients rather than providing dial-up services to general public (Keith 2001). Several factors influence the cooperation between reseller and the ISP: (i) overall service quality and company reputation (ii) financial stability of the company (iii) type of services to be provided (iv) reliability of ISP network (vi) connectivity options provided by small ISP, (vii) providing local access numbers while serving a regional value added reseller (viii) size of value added reseller. (Michael 2005) states that competition has been uneven in the ISP industry since deregulation in 1997. An increased competition is noticed only in CBD, Metropolitan areas but remained less outside these areas. Small ISP’s in regional areas are relying on Telstra’s network and Telstra is the sole provider in regional areas. Small ISP’s who do not resell telstra service need to rollout their own infrastructure.
Consumers can benefit a lot when new players rollout their infrastructure. To have a competitive market, reasonable pricing for access services is essential and this allows small ISP’s to compete with big players. Without providing a reasonable opportunity to use existing network (or) build a new access network, small ISP’s will face tough competition and burden of having to combat anti-competitive behavior with large players. Small ISP’s who have greater reliance on their own network can compete better than those who don’t own their network. The inability to access premium content will act as a barrier to new infrastructure investment. Provider’s success here depends on content distribution and the ownership (Nagarajan, Gene Awyzio, Peter Vial and Srivalli 2004).

5.IMPORTANCE OF FUNCTIONAL ELEMENTS IN SERVICE QUALITY FRAMEWORK:

Developing conceptual and empirical functional guidelines for Small ISP:

Service innovation among small ISP’s will be discouraged if government imposes a prescriptive regulatory framework. Thus using a specific model proposed by government using a regulatory approach will discourage the small ISP’s entering this market. Standards developed can only become meaningful to customers if they are sufficiently knowledgeable about standards. Characteristics of self reporting data in small ISP environment covers the determination of: appropriate format and content for reporting, provision of quality of service information to customers with a view to increase their subscriber base and take up of broadband service, expansion of their own reporting process framework using customer feedback, studying of service quality and complaints data (Telstra 2002). Small ISP’s participation in broadband monitoring and reporting framework is important as even the smallest niche player will be providing broadband services for an important market segment. This is important in the context of highly competitive and growing market (Telstra 2002) (ACA 2004). Mergers and Acquisitions opportunities: Many medium size ISP’s acquire several small ISP’s and continue to look for acquisition opportunities. (Craig, 2003) states that consolidation is noticeable at the smaller end of the market which typically serves between 100-1000 subscribers. Some questions that are relevant to consider are: Do small ISP’s invest in broadband infrastructure (or) do they sell. A good example is iinet internet company that is Perth based ISP who were able to acquire several small ISP’s and were able to rapidly grow their
subscriber base (Craig, 2003). (Craig, 2003) states that strong customer service focus was primary reason for their success. Recruiting staff from hospitality, tourism, retail (or) customer service and training them internally and maintaining the small business ethics lead to such success. Other interesting facts included ISP chariot becoming the sixth largest ISP in Australia having 250,000 customers with 20,000 on broadband (Craig, 2003). They increased their subscriber base by acquiring companies for past 3 years. Size thus becomes a critical factor to survive in the market (% of market they target). Consolidation is also on the increase due to increased uptake of broadband. The ISP sector in Australia is one of the most fragmented in the world (more ISP’s per user) (Christopher 2000). Thus these facts indicate that when ISP’s install their own network infrastructure, then customer base becomes an absolute necessity to justify investment. Many other providers like Primus acquired 2400 ADSL customers of DART, a Perth based ISP (Craig, 2003). Both medium sized ISP’s and large ISP’s are the most likely predators as they enter the market defensively and deprive small ISP’s of opportunities to scale up. Small ISP’s who offer only dial-up access will find it difficult to cope with such a competitor. Small ISP’s who have low margins due to small subscriber base can survive only if they focus on particular style of service. Small ISP’s providing only dial-up services lose subscribers going on to broadband whereas those who provided broadband services can competitively position themselves in the market (broadband market is different to dial up market). The success here depends upon achieving scale and owning infrastructure. In broadband environment infrastructure is very important. Buying large customer base during consolidation does not guarantee success- How well it is managed is the key factor deciding success? (Christopher 2000).

6. APPROPRIATENESS AND EFFECTIVENESS OF A SERVQUAL BASED DECISION SUPPORT SYSTEM TO MEASURE SERVICE QUALITY FOR ISP CUSTOMERS:

Service quality alignment: flexibility in functional service quality
ISP functional services cannot be completely standardized due to the need to allow for flexibility to meet special requirements of customers and to recover service failures. In this context guidelines are better than rigid standards. From competitive standpoint functional ISP services are difficult to standardize and it is difficult to monitor functional performance by comparing it to predetermined standards. The service quality model SERVQUAL uses five dimensions that are tangibles, reliability, responsiveness, assurance
and empathy (Banwari and Walfred 1998). Such model help us to understand and manage data in relation to: large number of ISP customers having different expectations, expectations changing over period of time, data collection and simulation/forecasting service trends is important, evaluating alternatives consistently, decision making through visualization will help to identify gaps and address them. ISP have several branches throughout Australia, centrally managed ISP SERVQUAL system (Database technology) (Norbert and Zita 2004). The SERVQUAL model is a very popular model used to measure service quality and the model has high face validity. It is very important for service managers to know if satisfied customers are always loyal and how service quality is related to satisfaction and customer loyalty. The two main aspects of service quality, which are functional and technical service quality, differ based on service contact in service industries. According to (Banwari and Walfred 1998) satisfaction ratings do not ensure loyalty. Even though they are correlated, the relationship is asymmetrical. Dissatisfaction guarantees switching providers, whereas satisfaction does not guarantee loyalty. The nature of inclination of switching providers is a function of satisfaction rating, technical quality rating and functional quality rating. Does functional quality play more significant than technical quality?, Does technical quality play more significant than functional quality?. The answers to these questions depend upon the nature of service industry and service contact with customers. Services provided by ISP are heterogeneous where performance provided by one ISP is different to another ISP. The nature of service quality makes it harder to be evaluated by customers. So small ISP’s are facing difficulties in meeting their customer expectations (Nagarajan 2005). In a service environment customers judge service not only based on outcomes, but also the process of service provision. Thus service quality is subjective. In a telecommunication environment different consumers consider different attributes important in connection with same service. A telecommunication company that serves retail and wholesale areas, the retail environment places more important on physical appearance of personnel, good information on the products and accessibility of the store. In wholesale environment more importance is placed on availability using telephones, good offers, relevant information and less emphasis on physical appearance (Norbert, Zita, 2004). ISP sector experiences a rapid improvement in technology, business, people and
processes. The ISP management providing functional services to their customers on a daily basis do not know whether their customers compare service quality they received in previous occasions and also compare performance with other ISP’s. The ISP managers who have knowledge about various service processes need concrete information to help them make effective decisions. Thus there is an absolute necessity to study to what extent they should reinforce service guarantee/strength and what future effects it has on ISP. Thus uncertainty and dynamic nature of ISP sector force decision makers to consider previous experience and/or rely on their intuitions. Such decisions can lead to incorrect problem identification which in turn leads to unsuccessful service solutions that are unable to adapt to current operating conditions (Norbert, Zita, 2004). Thus a service quality knowledge base can aid ISP’s to make competitive marketing decisions by understanding and managing service quality data (Nagarajan, Chavan, Tamrat, Peter Vial, Srivalli 2005). Figure 1 highlights such an approach. The following are the key elements involved in this process: **Item 1: Identifying the customer satisfaction models for ISP sector:** (Attribution model to know what customers perceive about ISP. This is used often in dissatisfaction models and helps to improve customer perception and service quality, Expectation-disconfirmation model to understand customer satisfaction and switching behavior, Affective model to help understand emotional variables and their important role in customer post purchase responses, Competitive positioning model to help understand customer choice of ISP (determinants), and positioning in relative to competition (Sunil erevelles, shuba srinivasan and steven rangel 2003). **Item 2: Decision support system based on SERVQUAL model:** to conduct servqual survey data and to understand customer perception, expectation, current ISP image. The system will incorporate database technology to store data and also should perform SERVQUAL analysis, display graphs (gaps visualization). **Item 3: Simulation Modeling and Analysis:** Using the reported functional data from such system and building up simulation models to perform different “what-if” scenarios to make competitive marketing decisions. Some examples include modeling the SERVQUAL “Responsiveness” dimensions as a part of ISP complaints handling study and identifying dimensions of complaints satisfaction (actual time and estimated complaints handling time as a function of satisfaction). **Item 4: Service Quality Knowledge
**Base:** Storing all service quality studies conducted over period of time and establishing a knowledge base of past, current and future customer service expectations. **Item 5: ISP Business Performance Framework:** Establishing an effective ISP business performance framework by understanding and managing service quality data (customer satisfaction, service quality, customer loyalty and retention, learning through service failures, service guarantee and strength). Importance of having an SERVQUAL based decision support system has been outlined in a case study conducted by (Norbert and Zita 2004).

**CONCLUSION:**
Many ISP’s operate in a very highly competitive market with slim profit. There is difficulty to sustain in countries where telecommunications liberalization occurred after explosion in internet use. Service managers need to make sure that all selected customer satisfaction variables that help customers to make decisions are relevant, comprehensible, quantifiable, measurable, comparable, revealing and available. In the current situation customer service department will be asked to serve more customers on broader scope of issues and problems and as cost effective as possible. ISP’s need to provide good functional service in situations where technical support is required. These include key service quality dimensions such as tangibles, reliability, responsiveness, assurance and empathy. Particularly issues like internet access problems, connectivity problems, password problems, search engine problem, technical related problems emphasizes that responsiveness nature of service providers to customers is very important. This will minimize customer exodus and reduce the churn rate.

**FIGURE 1: Establishing an effective ISP Business Performance Framework**
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