

# **Exploring internal and external service chains of electronic government services**

SHANG-CHING YEH

*Institute of Public Affairs Management, National Sun Yat-sen University, Kaohsiung, Taiwan, Republic of China*

PIN-YU CHU

*Department of Public Administration, National Chengchi University, Taipei, Taiwan, Republic of China*

*Taiwan Electronic Governance Research Center, Taipei, Taiwan, Republic of China*

## **Abstract**

Among the four major areas of e-government development, ‘government to citizen’ and ‘government to employee’ share the same objective: providing a better e-service for government’s external customers. However, there is little research conducting an integral approach to explore the linkage between internal and external customer perceptions in the e-government field. This research employed the concept of satisfaction mirror and the service profit chain model to propose an integral model for better understanding the relationships among internal marketing, internal service quality, internal customer satisfaction, and external customer satisfaction in e-government services. The authors presented implications regarding the proposed model for public administrators. Future studies to empirically test the proposed model would be strongly encouraged.

**Keywords:** electronic government (e-government), government-to-citizen (G2C); government-to-employee (G2E), internal marketing, internal service quality, internal customer satisfaction, external customer satisfaction, the satisfaction mirror effect, the service profit chain (SPC)

## **1. Introduction**

With the development of Information and communication technologies (ICTs), electronic government (e-government), introduced in the field of public administration in the late 1990s, has played an extremely important part in governance. Evolving over one decade, e-government services have continued to expand around the world. According to “UN e-government survey 2008”, 98% of its

member states were online with government websites or other forms. In a bid to make the government more effective and reduce costs, governments are choosing to provide an increasing number of public services online. Those include one-stop shop, submission of online forms, personal online account, payment by card, email sign-up option, response timer frame indicated for emails/forms, etc. (United Nations, 2008).

In citizen-centric public services, which is embodied in the spirit of the “reinventing government” movement proposed by Osborne and Gaebler (1992), public administrators are viewed not as bureaucrats, but as public servants who provide stability and continuity in government services. Citizens are therefore regarded as “customers” who become the central focus in the design of government service delivery. Designed as a “citizen-centered”, “results-oriented”, and “market-based” (White House, Office Management and Budget, 2002) service center, e-government employs ICTs to provide a better service for citizens. Among four major development of e-government<sup>1</sup>, G2C e-government engages in providing better e-services to satisfy citizens, i.e., external customers’ needs. On the other hand, G2E e-government aims to equip government employees, internal customers, with e-services ability to deliver efficient and cost-effective services to their citizens-external customers (Carter & Belanger, 2005, citing General Accounting Office, 2001). As stated, G2C and G2E both involve interaction and cooperation between government and individuals (Siau & Long, 2005). Moreover, G2C and G2E share the same objective: providing a better e-service for government’s external customers.

Researchers have identified internal and external customers and did comparative analysis of citizens and government officials’ perspectives on e-government (Huang, 2006; Moon & Welch, 2005). In addition, e-government research towards exploring internal customer perceptions (Barnes & Vidgen, 2003; Horan, Abhichandani, & Rayalu, 2006) and external customer perceptions (Hsiao, Chen, & Huang, 2002; Yu, 2005) were developed. However, little research was found to link the perceptions between internal customer perceptions and external customer perceptions in e-government research.

To better serve customers, literature in the service sector has shown that organizations not only need to focus on external markets and customers, but also need to consider an organization as a market and employees as internal customers (Barnes & Morris, 2000). Internal marketing, which is generally considered as a planned effort using a marketing-like approach to internal customers in an organization to deliver

---

<sup>1</sup> These include government-to-government (G2G), government-to-business (G2B), government-to-citizen (G2C) and government-to-employee (G2E) (Siau & Long, 2005).

customer satisfaction (Lings, 2004), is proposed and considered more important than external marketing. In addition, researchers have suggested that the higher the degree of employee satisfaction, the higher the possibility of external customer satisfaction, which underpinned by the “satisfaction mirror effect” and the “service profit chain” (SPC) model (Heskett, Jones, Loveman, Sasser, & Schlesinger, 1994; Heskett, Sasser, & Schlesinger, 1997).

Internal marketing empirical research in the service sector has proven that internal marketing has influenced on internal customer satisfactions (Ahmed, Rafiq, & Saad, 2003). However, a construct that closely relates to internal marketing and internal customer satisfaction, namely internal service quality, and its exact relation to internal marketing and internal customer satisfaction, remains to be empirically verified (Chaston, 1995). The link of internal customer perceptions and external customer perceptions was proposed by various researchers. However, in the service sector, the empirical studies to test the linkages among those constructs remain ambiguous. More importantly, little is known about the linkages between internal marketing, internal service quality and internal customer satisfaction, i.e. the internal service chain; and the linkage to external customer satisfaction, i.e. internal and external service chains, in e-government field.

As described above, there is a need to integrally explore internal and external service chains in the context of e-government services. This would increase our understanding of these critical concepts and their relationships, and thus allow public administrators to better serve citizens as well as employees through satisfying employees by internal marketing activities. Accordingly, this research aims to (1) promote to employ internal marketing in e-government services, and (2) propose an integral model for realizing the relationships among internal marketing, internal service quality, internal customer satisfaction, and external customer satisfaction in e-government services, i.e. the internal and external service chains. In the following sections, this research firstly reviews the literature of customer-centric research in e-government services, and literature of key constructs of the proposed model. The integral model and propositions will then be introduced, followed by implications and future research directions.

## **2. Customer-centric research in e-government services**

From a perspective of customer service, there are two kinds of customers that e-government faces: internal customer and external customer. Internal customers are

employees of government or governmental officials, i.e. internal users of e-government services. Citizens are external customers of e-government services, namely external users of those services.

There is a body of literature exploring perceptions of external customers toward e-government services. The objective of measurement of external customer perceptions is to examine whether their needs are satisfied/met or not. These works usually measured quality of web-based e-government services or e-government websites from users' subjective perceptions. Researchers developed or adopted indicators or instruments from literature to examine satisfaction or quality/service quality of e-government services by collecting users' perception data. For example, Barnes and Vidgen (2003) used WebQual, with dimensions containing usability, information quality and service interaction, to assess users' perceptions of the quality of a specific cross-national Web site provided via the OECD-before and after a process of redesign. Horan et al. (2006) constructed an EGOVSAT instrument, comprising utility, reliability, efficiency, customization, flexibility and sub-dimensions, to evaluate users' satisfaction with the Advanced Travel Information System (ATIS), a form of G2C e-government service. In citizen electronic compliant service research, Chen and Hsiao (2001) discussed external customers' satisfactions using indicators such as 'an effective communication channel,' 'extent of complaints resolved,' time efficiency to be resolved,' 'service attitude,' and 'overall satisfaction' through satisfaction survey in the Taipei City Mayor Emailbox (TCME) in Taiwan.

Internal marketing research and measurement of perceptions of internal customers in e-government field are still in its infancy. Hsiao et al. (2002) in a research project regarding the TCME used nominal group technique (NGT) to realize government officials' perspectives about problems encountered, suggestions, workloads, reasons about citizens' complaint unsolved relating the TCME. Yu (2005) introduced internal marketing in his research on the Kaohsiung Citizen Electronic Complaint System (KCECS) internal customers, employing an integral model to explore the relationships among internal marketing, system management, electronic service quality, and internal customer satisfaction. The results showed that internal customer satisfaction was influenced by internal marketing and system management.

Some research works in the e-government field distinguished internal customers and external customers and explored perspectives on e-government of the two groups in terms of attributes of e-government. Moon and Welch (2005), using the data collected from independently administered random surveys of citizens and bureaucrats by Hart-Teeter in 2001, found that citizen and bureaucrat or public servant perspectives on e-government diverged in terms of the effectiveness of

e-government, pace of e-government implementation, equity, and safety. For example, they found public servants appear to be more familiar, better informed and more confident about the prospect of e-government than citizens. They also took a lead in supporting and advancing e-government and support a faster implementation of e-government than citizens. Huang (2006) found that citizens in Taiwan perceived lower importance than government officials toward e-service providing, public consultation, and decision participation.

Although the objectives of G2C and G2E fall into the same category, there is little research to examine linkage of G2C and G2E, i.e. the relationships between internal customer perceptions and external customer perceptions in e-government services. Chen, Huang, and Hsiao. (2006), taking the TCME in Taiwan as a case study, presented both citizens' satisfaction toward the TCME and government officials' perspectives about the system without analyzing their possible causal relationship. As stated, there is a need to propose an integral model to explore the linkage among internal marketing, internal customer perceptions, and external customer perceptions in the context of e-government services.

### **3. Internal and external constructs and their measurements**

#### **3.1 Internal marketing and its activities**

Internal marketing is generally considered a planned effort using a marketing-like approach to internal customers in an organization to deliver customer satisfaction (Lings, 2004). Evolving over three decades, there are two major essences of internal marketing. The first one holds a process perspective, which views all employees and departments as simultaneously being internal customers of, and internal suppliers to, other employees and departments in an organization. It is closely related to the process element of the service profit chain (Heskett et al, 1994; Heskett et al, 1997). The basic premise of this perspective for internal marketing is that by increasing the quality of service transactions with internal customers, organizations can positively influence the service quality transactions with external customer (Heskett et al., 1994). The second one concentrates on a human resources perspective, which is grounded in the belief that external marketing success is contingent on the organization having satisfied and motivated employees and that creating such employees is the role of internal marketing (Berry, 1981). The focus of this perspective of internal marketing is on the relationship between the organization and its employees and how this relationship can facilitate the relationship between the

employees and the customers (Lings, 2004).

Various internal marketing activities were presented in relevant literature. Lings (2004) proposed an internal market orientation (IMO) construct<sup>2</sup>, defining the construct as identifying and satisfying the wants and needs of employees as a prerequisite for satisfying the wants and needs of customers, which is consistent with the internal marketing concept. She grouped internal marketing activities into (a) internal marketing research: generating information pertinent to the internal market, (b) internal communications, and (c) management responsiveness: including a variety of management actions such as: Job design, incentive system), management support, training, education and development, etc.

With respect to e-service and public service, Yu (2005) referred literature in service industry to measure internal marketing in his study of employing internal customer orientation for improvement strategy of the KCECS. Considering the characteristics of the public service and e-service, four types of internal marketing activities were chosen. They are “understanding working requirements of employee”, “internal market survey”, “internal communications”, and “management responsiveness”. As “understanding working requirements of employee” and “internal market survey” can be categorized into “internal marketing research”, Yu’s (2005) four types of internal marketing activities were similar with Lings’ (2004) grouping.

### **3.2 Internal service quality and its measurement**

The concept of internal service quality is derived from external service quality. A common definition of internal service quality is a measure of how well the internal service providers provide or respond to internal customers (Hallowell, Schlesinger, & Zornitsky, 1996; Heskett et al., 1994). While internal service quality is a construct measuring internal supplier’s service provided, it is rather different from the one of internal marketing. Specifically, internal marketing involves perceptions of the effort of marketing-like activities that internal service providers have made for internal customers, whereas internal service quality is about the perceptions of internal customers toward the service by internal service providers.

Much research is based on the so-called “gap model” of service quality and its measuring scales-SERVQUAL developed by Parasuraman, Zeithaml, and Berry (1988) to measure internal service quality. INTSERVQUAL, with the same dimensions as SERVQUAL: tangibles, reliability, responsiveness, assurance, and empathy, was introduced (White & Rudall, 1999). By contrast, some researchers measure internal

---

<sup>2</sup> Gounaris (2006) modified Lings’s (2004) IMO model and empirically measured the construct. He asserted that IMO appears to be a hierarchical construct, comprising three major dimensions: internal-market intelligence generation, internal-intelligence dissemination, and response to internal-intelligence, with ten sub-dimensions.

service quality through the collection of components of the constructs from the literature. For example, Hallowell et al. (1996) in their empirical study of two U.S. insurance companies collected 8 internal service quality components from service literature: tools, policies and procedures, teamwork, management support, goal alignment, effective training, communication, rewards and recognition. As discussed above, the composition of internal service quality can vary for different organizations at different times (Hallowell et al., 1996). Consequently, the need to identify and measure internal service quality when encountering specific settings may still exist, since internal customers are able and prepared to produce scaled assessments of the service they themselves receive from internal service providers (Reynoso & Moores, 1995).

### **3.3 Internal customer satisfaction and its measurement**

There are similar ideas in internal customer satisfaction, such as “employee satisfaction” and “job satisfaction”. A simple and direct definition for employee satisfaction is the gratification or prosperity that the employees get from their job (Hellriegel, Jackson, & Slocum, 1999). Every aspect that has to do with the influence that the job has on the employee, as well as the perception that the employee has of the job/organization, is included in this definition of employee satisfaction (Eskildsen & Nussler, 2000). Job satisfaction receives broad research attention, and some indexes for measuring this construct have been developed, such as Job Satisfaction Survey (JSS, Spector, 1985). In addition, job satisfaction could be regarded as a concept of overall satisfaction (Kalleberg, 1977), and be measured in a single construct in empirical studies.

With respect of e-service of internal customer satisfaction, this construct was practically measured with items concerning aspects of satisfaction toward the e-service. For example, Rose and Wright (2005), in a study exploring factors predicting job satisfaction in call centers, measured job satisfaction with four items concerning influence over the job, pay, sense of achievement, and respect from supervisor.

### **3.4 External customer satisfaction and its measurement**

One description of external customer satisfaction from service management literature is the result of a customer’s perception of the value received in a transaction or a relationship (Hallowell, 1996). Some scholars stated that the concept of satisfaction comprises three constructs: expectation, perceived performance, and disconfirmation. For example, Bolton and Drew (1991) defined customer satisfaction or dissatisfaction as a function of the disconfirmation arising from discrepancies

between prior expectations and actual performance. However, other researchers argued that performance-only measures of construct have been found to be more valid and reliable than using traditional expectancy-disconfirmation paradigm (Cronin & Taylor, 1992). Although many models for measuring external customer satisfaction have been proposed, customer satisfaction could also be regarded as a concept of overall satisfaction of performance or experience, and be measured in a single construct in empirical studies (e.g. Kim, Jeong, Park, Park, Kim, & Kim, 2007).

Previous studies of e-government services have proposed five indicators for measuring citizen (external customer) satisfaction (Chen & Hsiao, 2001; Chen et al., 2006; Hsiao et al., 2002). They are the system “as an effective communication channel”, “extent of complaints resolved”, “time efficiency to be resolved”, “service attitudes”, and “overall satisfaction”. Hsiao et al. (2002) using the TCME as an example, finding that “extent of complaints resolved”, “time efficiency to be resolved”, and “service attitudes”, served as significant predictors for the TCME users’ “overall satisfaction”.

## **4. Linking internal and external customer service chains**

### **4.1 The service profit chain and satisfaction mirror effect**

Heskett et al. (1994) first proposed the SPC model<sup>3</sup>. The links in the chain are as follows (Figure 1): Profit and growth are stimulated primarily by customer loyalty. Loyalty is a direct result of customer satisfaction. Satisfaction is largely influenced by the value of services provided to customers. Value is created by satisfied, loyal and productive employees. Employee satisfaction, in turn, results primarily from high-quality support services and policies that enable employees to deliver results to customers. Internal service quality can be achieved through work place design, job design, employee selection and development, employee rewards and recognition, and tools for serving customers, namely the internal marketing activities. The SPC is underpinned by the “satisfaction mirror” effect, which indicates that customer satisfaction is achieved through satisfied employees (Heskett et al., 1997). State simply, the SPC asserts that, in the service sector, satisfied and motivated employees produce satisfied customers, and satisfied customers tend to purchase more, increasing the revenue and profits of the organization. That is, there are three key factors in the SPC: employee perceptions, customer perceptions, and organizational performance, while the employee perceptions can be enhanced by internal marketing.

---

<sup>3</sup> Heskett et al. (1997) revised the model of the SPC. However, the revised SPC model heavily relies on the original model, with primary components and links unchanged.

Some researchers employed the concept of the SPC and examined the linkage between employee perceptions, customer perceptions, and organizational performance. For example, Rucci, Kirn, and Quinn (1998) conducted studies in Sears in the US and found that 5 % improvement in employee attitudes would drive a 1.3 % improvement in customer satisfaction, which in turn would drive a 0.5 % improvement in revenue growth.

By introducing internal marketing and employing the concept of the satisfaction mirror effect and the SPC model, the authors propose an integral model for understanding internal and external service chains in e-government services. The model and propositions are described below.

#### **4.2 Internal marketing and internal service quality**

Most researchers in service sector agree that internal marketing should improve service quality (e.g. Berry & Parasuraman, 1991). In addition, the literature also reveals that the adoption of internal marketing may improve the quality of services delivered to internal customer (Chaston, 1995). This gives rise to Proposition 1 (see Figure 2):

**Proposition 1:** Internal marketing will exert a significant and positive influence on internal service quality in e-government services.

#### **4.3 Internal marketing and internal customer satisfaction**

The concept of internal marketing has been initiated in the definition of viewing employees as internal customers, and jobs as internal products that satisfied the needs and wants of these internal customers (Berry, 1981), satisfying employees through internal marketing has widely recognized (e.g. Berry & Parasuraman, 1991). As a result, the effect of employing an internal marketing approach would be to create more satisfied employees and hence lead to greater customer satisfaction. In addition, Ahmed's et al. (2003) empirical study using organization competencies, including employee satisfaction, found that internal marketing mix components appeared to be strong predictors of employee satisfaction. This gives rise to Proposition 2:

**Proposition 2:** Internal marketing will exert a significant and positive influence on internal customer satisfaction in e-government services.

#### **4.4 Internal service quality and internal customer satisfaction**

Heskett et al. (1994) provided the SPC model, in which established relationship between internal service quality and employee satisfaction. They asserted that employee satisfaction results primarily from high-quality support services and

policies, i.e., internal service quality that enables employees to deliver results to customers. Several studies empirically tested the link between employee satisfaction and internal service quality in Heskett et al.'s (1997) revised SPC model. Silvestro and Cross (2000) found no significant correlation existing between the link. However, more studies (Loveman, 1998; Pritchard & Silvestro, 2005) found positive correlations between them. As a result, the link needs more empirical testing. This gives rise to Proposition 3:

**Proposition 3:** Internal service quality will exert a significant and positive influence on internal customer satisfaction in e-government services.

#### **4.5 Internal customer satisfaction and external customer satisfaction**

The association between employee satisfaction and customer satisfaction has been proposed by researchers. A number of papers have emerged in providing some empirical supports for the link, including Schlesinger and Heskett (1991), Schneider and Bowen (1993), etc. Besides, Koys (2001) have reported correlations between customer satisfaction and measures of employee satisfaction. This gives rise to Proposition 4:

**Proposition 4:** Internal customer satisfaction will exert a significant and positive influence on external customer satisfaction in e-government services.

### **5. Implications and future research directions**

The internal and external service chains model in e-government services proposed in this paper suggests implications for public administrators, especially for supervisors in a public organization involved in providing e-services. First, not only does government interact with public servant more efficiently and equip them with e-service ability from an organization's perspective, but also government needs to realize public servants' needs and satisfy them from employees' perspective. Public administrators could make public servants, i.e. internal customers, more satisfied with their work by internal marketing activities. These activities involve understanding employees' needs through internal marketing research, designing electronic equipments/systems with their needs, creating internal communication channels, maintaining management support, etc.

Second, in addition to internal marketing, internal service quality needs to be addressed. The way internal suppliers treat internal customers in every aspects could be perceived as determinants for satisfaction of internal customers. A message for public administrators here may be that nurturing in public administrators the

perception that their internal service quality contribution to the employees is conducive to the creation of a good internal working environment. The better the perceived internal service quality, the higher the internal customer satisfaction would be, leading to an opportunity for external customers being well served.

Third, one of important ways to better serve citizens, i.e. government's external customers, is through better serving internal customers. If the concept of the satisfaction mirror effect and the SPC originated from the service sector could be verifiably employed in the public sector, satisfied and motivated public servants could produce satisfied citizens, and satisfied citizens tend to reuse government service, increasing performance of the organization. From a perspective of performance evaluation, by maintaining internal aspects of performance such as internal customer satisfaction, some of external aspects of organization performance such as external customer satisfaction could be ensured.

This research proposes an integral model for public administrators to better understand the relationships among internal marketing, internal service quality, internal customer satisfaction, and external customer satisfaction in e-government services. Also, this research broadened the application of internal marketing originated from the service sector to the public sector. Future research to test the propositions presented in this paper would be strongly encouraged. The satisfaction mirror effect and the SPC would be better employed in the "contact service" industry, such as bank, retailer, which involves contacts between employees and customers (Pritchard & Silvestro, 2005). When testing the proposed model in e-government services, those involving "on-line personnel contact" such as e-complaint system or call centre, other than online payment or information download that need not to contact service person except for occurring problems, would be more suitable as a case for testifying.

## References

- Ahmed, P. K., Rafiq M., & Saad, N. M. (2003). Internal marketing and the mediating role of organizational competencies. *European Journal of Marketing*, **37**(9), 1221-1241.
- Barnes, B. R., & Morris, D. S. (2000). Revising quality awareness through internal marketing: An exploratory study among French and English medium-sized enterprise. *Total Quality Management*, **11**, 473-483.

- Barnes, S. J., & Vidgen, R. (2003). Measuring web site quality improvements: A case study of the forum on strategic management knowledge exchange. *Industrial Management & Data Systems*, **103**(5), 297-309.
- Berry, L. L. (1981). The employee as customer. *Journal of Retail Banking*, 3(March), 25-28.
- Berry, L. L., and Parasuraman, A. (1991). *Marketing for services: Competing through quality*. New York: The Free Press.
- Bolton, R. N., & Drew, J. H. (1991). A multistage model of customers' assessments of service quality and value. *Journal of Customer Research*, **17**(March), 375-384.
- Carter, L. & Belanger, F. (2005). The utilization of e-government services: Citizen trust, innovation and acceptance factor. *Information Systems Journal*, **15**(1), 5-25.
- Chaston, I. (1995). A typology for evaluating branch-level perceptions of internal customer management processes within the UK clearing banks. *The Service Industries Journal*, **15**(3), 332-349.
- Chen, D., Huang, T., & Hsiao, N. (2006). Reinventing government through on-line citizen involvement in the developing world: A case study of Taipei City Mayor's E-mail box in Taiwan. *Public Administration and Development*, **26**, 409-423.
- Chen, D., & Hsiao, N. (2001). *Feedback mechanism for citizens' opinion for Taipei City*. Taipei, Taiwan: The Research, Development and Evaluation Commission, Taipei City Government (in Chinese).
- Cronin, J. J., & Taylor, S. A. (1992). Measuring service quality: A reexamination and extension. *Journal of Marketing*, **56**(July), 55-68.
- Eskildsen, J. K., & Nussler, M. L. (2000). The managerial drivers of employee satisfaction and loyalty. *Total Quality Management*, **11**(4, 5&6), 581-588.
- General Accounting Office, David McClure (2001). *Electronic government: Challenges must be addressed with effective leadership and management*.
- Gounaris, S. P. (2006). Internal-market orientation and its measurement. *Journal of Business Research*, **59**, 432-448.
- Hallowell, R. (1996). The relationships of customer satisfaction, customer loyalty, and profitability: An empirical study. *International Journal of Service Industry Management*, **7**(4), 27-42.
- Hallowell, R., Schlesinger, L. A., & Zornitsky, J. (1996). Internal service quality, customer and job satisfaction: Linkage and implications for management. *Human Resource Planning*, **19**, 20-31.
- Hellriegel, D., Jackson, S. E., & Slocum, J. W. (1999). *Management*. Cincinnati: South-Western.

- Heskett, J. L., Jones, T. O., Loveman, G. W., Sasser Jr., W. E., & Schlesinger, L. A. (1994). Putting the service-profit chain to work. *Harvard Business Review*, **72**, 164-174.
- Heskett, J. L., Sasser Jr., W. E., & Schlesinger, L. A. (1997). *The service profit chain: How leading companies link profit and growth to loyalty, satisfaction and value*. New York: Free Press.
- Horan, T. A., Abhichandani, T., & Rayalu, R. (2006). Assessing user satisfaction of e-government services: Development and testing of quality-in-use satisfaction with Advanced Traveler Information System (ATIS). *Proceedings of the 39<sup>th</sup> Hawaii International Conference on System Sciences*, 1-10.
- Hsiao, N., Chen, D., & Huang, T. (2002). *Transforming citizens' opinion to administrative knowledge: Perspectives from knowledge management and data mining*. Taipei, Taiwan: The Research, Development and Evaluation Commission, Taipei City Government (in Chinese).
- Kim, K., Jeong, I., Park, J., Park, Y., Kim, C., & Kim, T. (2007). The impact of network service performance on customer satisfaction and loyalty: High-speed internet service case in Korea. *Expert Systems with Applications*, **32**, 822-831.
- Koys, D. J. (2001). The effects of employee satisfaction, organizational citizenship behavior an turn over on organizational effectiveness: A unit-level longitudinal study. *Personnel Psychology*, **54**, 101-114.
- Lings, I. N. (2004). Internal market orientation construct and consequences. *Journal of Business Research*, **57**, 405-413.
- Loveman, G. W. (1998). Employee satisfaction, customer loyalty, and financial performance: An empirical examination of service profit chain in retail banking. *Journal of Service Research*, **1**(1), 18-31.
- Osborne, D., & Gaebler, T. (1992). *Reinventing government: How the entrepreneurial spirit is transforming the public sector*. Reading, MA: Addospm-Wesley.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, **64**(1), 12-40.
- Pritchard, M., & Silvestro, R. (2005). Applying the service profit chain to analyze retail performance: The case of the managerial strait-jacket? *International Journal of Service Industry Management*, **16**(3-4): 337-356.
- Reynoso, J., & Moores, B. (1995). Towards the measurement of internal service quality. *International Journal of Service Industry Management*, **6**(3), 64-83.
- Rose, E., & Wright, G. (2005). Satisfaction and dimensions of control among call centre customer service representatives. *International Journal of Human Resource Management*, **16**(1), 136-160.

- Rucci, A. J., Kirn, S. P., & Quinn, R. T. (1998). The employee-customer-profit chain at Sears. *Harvard Business Review*, **1**(Jan-Feb), 83-97.
- Schlesinger, L. A., & Heskett, J. L. (1991). Breaking the cycle of failure in services. *Sloan Management Review*, **32**(3), 17-28.
- Schneider, B., & Bowen, D. (1993). The service organization: Human resources management is crucial. *Organizational Dynamics*, 39-52.
- Seifert, J. W., & Petersen, E. R. (2002). The promise of all things e? Expectations and challenges of emergent electronic government. *Perspectives on Global Development and Technology*, **1**(2), 193-212.
- Siau, K., & Long, Y. (2005). Synthesizing e-government stage models: A meta-synthesis based on meta-ethnography approach. *Industrial Management & Data*, **105**(4), 443-458.
- Silvestro, R., & Cross, S. (2000). Applying the service profit chain in a retail environment: Challenging the "satisfaction mirror". *Internal Journal of Service Industry Management*, **11**(3), 244-268.
- Spector, P. E. (1985). Measurement of human service staff satisfaction: Development of job satisfaction survey. *American Journal of Community Psychology*, **13**(6), 693-713.
- United Nations (2008). UN e-government survey 2008: From e-government to connected governance. Retrieved 2008.4.25 from <http://unpan1.un.org/intradoc/groups/public/documents/UN/UNPAN028607.pdf>.
- White, C., & Rudall, L. (1999). INTSERVQUAL: An investigation of the dimensions and measurement of internal service quality in the hospitality industry. *Australian Journal of Hospitality Management*, **6**(2), 13-22.
- White House, Office Management and Budget. (2002). *The strategy of e-government*. Retrieved Mar. 20, 2007 from <Http://www.whitehouse.gov/omb/inforeg/egovstrategy.pdf>.
- Yu, R. (2005). *The improvement strategy of Kaohsiung Mayor's Mailbox via internal customer orientation*. Unpublished master thesis, National Sun yet-sen University, Kaohsiung, Taiwan (in Chinese).

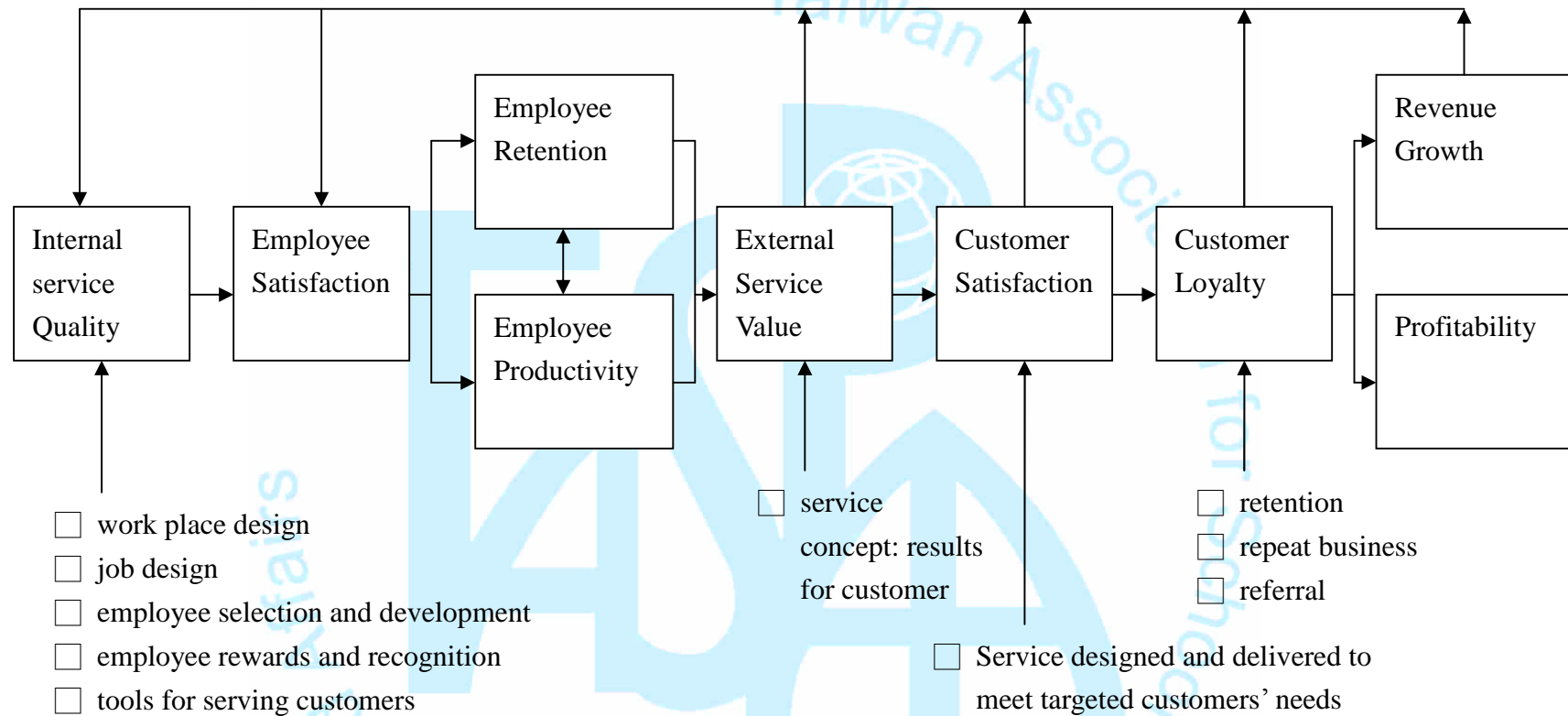


Figure1 The service profit chain. Heskett, J. L., Jones, T. O., Loveman, G. W., Sasser Jr., W. E., & Schlesinger, L. A. (1994). Putting the service-profit chain to work. *Harvard Business Review*, 72, 164-174. pp. 166.

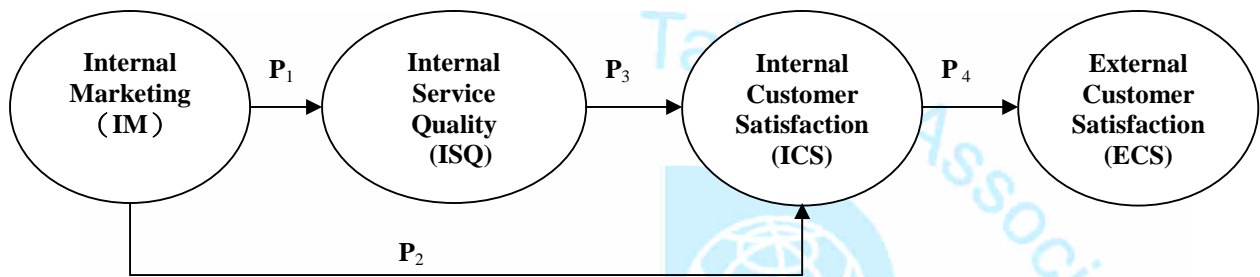


Figure 2 Proposed relationships between internal marketing, internal service quality, internal customer satisfaction, and external customer satisfaction