Enabling E-Parliament Systems to Enhance User Engagement: A Case Study of the Thai Parliament

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ABSTRACT

The process of passing an act for the Thai Parliament can be a long and complex process of information gathering and disseminating. Hence, the e-parliament project has given hope to pave the way for better legislative information management. The objectives of this study are to investigate an e-parliament engagement model and to report findings from an empirical study of the researcher's model. The researcher proposes a comprehensive theoretical framework to identify how to enhance Member of the Parliament (MP) engagement of e-parliament systems with a set of 13 predictor variables. A total of 371 usable questionnaires were returned, accounting for a response rate of 53%. The researcher concludes that together the 13 e-parliament factors explain 60.6% of the variance in MP engagement. Listed in order of significance, the predictor variables on MP engagement of e-parliament systems are trust, usefulness, word of mouth, and strategic use of IT in terms of networking. The study extends user engagement perspective of Human-Computer Interaction (HCI) field, Integrating Internal Systems (IIS), Technology Acceptance Model (TAM), Diffusion of Innovation Theory (DOI), Trust, and Post-Adoption Model (PAM).

บทคัดย่อ

กระบวนการบัญญัติกฎหมายของรัฐสภาไทยเป็นกระบวนการรวบรวมและเผยแพร่สารสนเทศที่ยาว และซับซ้อน ดังนั้น โครงการรัฐสภาอิเล็กทรอนิกส์จึงเป็นความหวังสู่เส้นทางในการจัดการสารสนเทศที่ เกี่ยวกับการบัญญัติกฎหมายให้ดีขึ้น จุดประสงค์ของงานวิจัยนี้ คือ การสืบหาแบบจำลองในการทำให้รัฐสภา อิเล็กทรอนิกส์ได้รับความสนใจมากขึ้น และเพื่อรายงานการค้นพบจากการศึกษาแบบจำลองของผู้วิจัย นอกจากนี้ ผู้วิจัยยังนำเสนอกรอบทฤษฎีที่ครอบคลุมถึงการทำให้สมาชิกรัฐสภาไทยมีความสนใจกับระบบ รัฐสภาอิเล็กทรอนิกส์มากขึ้น โดยการวัดตัวแปรอิสระ 13 ตัวแปร พร้อมกันนั้น งานวิจัยนี้ยังประยุกต์ใช้การ ทำวิจัยเชิงสำรวจทางไปรษณีย์ การวิเคราะห์ในเชิงคุณภาพ การสัมภาษณ์เชิงลึกทั้งก่อนและ หลังการเก็บ ข้อมูล โดยผู้วิจัยได้รับแบบสอบถามตอบกลับและนำไปวิเคราะห์ได้ 371 ชุด หรือมีอัตราการตอบกลับ 53% โดยรวมแล้วกลุ่มของตัวแปรอิสระทั้ง 13 ตัวแปรจะอธิบายความคลาดเคลื่อนต่อความสนใจของสมาชิก รัฐสภาไทยได้ 60.6% ส่วนการเรียงลำดับตัวแปรอิสระที่เกี่ยวกับระบบรัฐสภาอิเล็กทรอนิกส์ซึ่งส่งผลต่อ ความสนใจของสมาชิกรัฐสภาไทย ตามความสำคัญจากมากไปน้อย ได้แก่ ความไว้วางใจในการใช้ ประโยชน์ ใช้สอย ปากต่อปาก และการใช้เทคโนโลยีสารสนเทศในเชิงกลยุทธ์ทางด้านการเชื่อมโยงเครือข่าย นอกจาก นั้น งานวิจัยนี้ยังขยายฐานความรู้ที่เกี่ยวกับผู้ใช้ของทฤษฎีสาขาการ โต้ตอบระหว่างมนุษย์กับคอมพิวเตอร์ ทฤษฎีระบบการบูรณาการภายในองค์กร (ภาครัฐ) ทฤษฎีแบบจำลองการยอมรับเทคโนโลยี ทฤษฎีการแพร่ กระจายของนวัตกรรม ทฤษฎีการไว้ใจ และทฤษฎีแบบจำลองภายหลังการยอมรับเทคโนโลยี

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INTRODUCTION

The United Nations (2008) and Inter-Parliamentary Union defined 'e-Parliament' as "a legislature that is empowered to be more transparent, accessible and accountable through Information and Communication Technology" (ICT) in the World e-Parliament Report 2008. According to the global e-government readiness ranking in 2008, Sweden was the world leader followed by Denmark and Norway. Nevertheless, a serious access-divide has existed across the world between the developed and developing countries. Governments in the high income countries are far advanced in their online services to citizens. The bottom countries, offering rudimentary e-government services, have shown little relative progress. Of particular concern are the countries belonging to the regions of South and Central Asia and Africa, which, together, house one-third of humanity (United Nations, 2005). Such principles are critically important because new technological innovations such as mobile government (m-government) and open source software have come forth. There is a danger that unequal diffusion of technology will result in economic and social inequalities which will lead to a weakening of social and cultural bonds. E-Government is categorized into four different groups: Government-to-Government (G2G), Government-to-Business (G2B), Government-to-Citizen (G2C), and Government-to-Employee (G2E) (Evans and Yen, 2006). While G2E includes a web-based payroll and health benefits system (Lee et al., 2005) for any government unit, the Integrating Internal Systems (IIS) are the Enterprise Resource Planning (ERP)-like systems that integrate different functions of an organization into a single agency. In other words, IIS are the governmental integrated internal systems. In order to explore the interlinkages between human development and ICT development, there is a need to devote more research effort to user perspectives of ICT development especially in the governmental integrated internal systems context.

During the late 1990's, the ten members of the Association of Southeast Asian Nations (ASEAN) including Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Vietnam, and Thailand sought to place their public sectors online and to promote e-government as part of the "e-ASEAN initiative," which was an agreement of ASEAN countries to empower the region's information technology (IT) capacity (Holliday, 2002). Thailand was the first country in ASEAN to implement e-Thailand concepts. The e-parliament project has been a part of e-Thailand concepts, which has been seen as a "must-do" project for the Thai Parliament. The country accomplished the first major task of the e-parliament project by hosting the 2nd General Assembly of the International Parliamentarians' Association for Information Technology (IPAIT), May 17-19, 2004 in Bangkok, Thailand. IPAIT was the world's first official inter-parliamentary group founded to facilitate the exchange of ideas in the IT field in order to improve the standard of ICT among member countries in both developed and developing nations and to collect ideas on how to reduce the negative aspects of utilizing ICT in parliamentary applications (IPAIT, 2003).

Thailand adopted the parliamentary system after governance by the King was changed from an absolute monarchy to a constitutional monarchy in 1932. Prior to the coup d'etat in 2005, the Prime Minister chosen by the Parliament was the Chief Executive of the country, while the King or the Queen was the Head of State. Under the constitution (October 11, 1997), the Thai Government includes the National Assembly (The Parliament), the Cabinet Ministers (35 ministers and the prime minister), and the Courts. Since the previous Senatorial National Election in 2000 and the previous House of Representatives National Election in 2005, Members of the Parliament (MPs) have included 200 Senators (Ss) and 500 Members of the House of Representatives (HoRs). Four hundred HoRs were elected as the constituency basis and 100 were elected as the party list (C. Kanthawongs, personal communication, November 15, 2005; Kanthawongs, 2004b, 2004c, 2004d, 2005; Kanthawongs and Polatoglu, 2005; The Secretariat of the House of Representatives, 2006).

By July 2004, the population of Thailand was around 64 million (CIA, 2004). The HoRs represented 76 provinces ("Chan-wat" in the Thai language). Thus, there were 400 constituencies for 400 HoRs in the whole country of Thailand (C. Kanthawongs, personal communication, November 15, 2005; Kanthawongs, 2004b, 2004c, 2004d, 2005; Kanthawongs and Polatoglu, 2005; The Secretariat of the House of Representatives, 2006). While Members of the House of Representatives (HoRs) introduce and draft bills, Senators (Ss) approve the bills; therefore, they are the legislators who play major roles in the legislative processes.

The process of passing an act for the Thai Parliament can be a long and complex process of information gathering and disseminating (The Secretariat of the House of Representatives, 2006). Hence, the e-parliament project has given hope to pave the way for better legislative information management. The first phase of the e-parliament project was included in the first ICT master plan from 2001 to 2003. Later, the fine tuning stage of the e-parliament project was described in an ICT master plan starting in 2004 and ending in 2006. From 2006 onward, the Parliament has planned to enhance online information and transactional services to promote e-democracy. Additionally, ICT at the Parliament is expected to be used to improve the representative role of the Parliament so that the MPs are better connected with their electorates as well as to offer the public opportunities to participate more directly and collectively in policy input processes of parliamentary democracy (IPAIT, 2003). In reality, many complex questions remain. Although a roadmap of the e-parliament development shows that the

Thai Parliament has been carrying out the e-parliament project for more than 16 years now, the Thai parliamentarians have hardly made use of these e-parliament systems. For example, the academic resources from the parliamentary library were insufficient and the computer center needed improvement (Rupsuwan, 1997). Additionally, the MPs thought that the parliamentary library services, the parliamentary academic services, and the parliamentary legal services still served information needs of the parliamentarians at the medium level. Lastly, the MPs still preferred information in document format instead of CD-Rom format or web site formats (The Secretariat of the House of Representatives, 2006).

The results of this study would be significant for several reasons. First of all, it is expected to fill the existing knowledge gap for academic researchers in the field of Management Information Systems (MIS) in terms of Human-Computer Interaction (HCI), Integrating Internal Systems (IIS), Technology Acceptance Model (TAM), Diffusion of Innovation Theory (DOI), Trust, and Post-Adoption Model (PAM) by providing empirical evidence of the effects of key factors such as e-communication, strategic use of IT, usefulness, subjective norm, and trust on user engagement. Furthermore, it can potentially go beyond the field of MIS to other fields such as Organizational Behavior (OB), Human Resources Management (HRM), and Operation Management (OM) since the results are highly related to the user perspective of the systems. Additionally, it sheds light on "best practices" of Integrating Internal Systems (IIS), resembling the Enterprise Resource Planning (ERP) systems, which integrate different functions of an organization into a single agency. Moreover, it provides insights to the nature of user engagement as how organizations or companies can design systems to the full capacity. Also, it can be broadly applicable to other elected official users in other countries or other government levels such as those from district, city, and province elections. Therefore, the purposes of this study are to investigate the user engagement perspective of Human-Computer Interaction (HCI), Integrating Internal Systems (IIS), Technology Acceptance Model (TAM), Diffusion of Innovation Theory (DOI), Trust, and Post-Adoption Model (PAM) and to report findings from an empirical study of the researcher's model.

LITERATURE REVIEW

Parliament, ICT, and the e-Parliament Concepts

Since the late 1990s, Information Communication Technology (ICT) has diffused into a variety of democratic forms including processes of parliamentary democracy. In particular, Magarey suggested that parliamentary web sites were already well established for the Australian Members of the House of Representative (HoRs) and Senators (Ss). Each has a home page providing basic biographical information,

his/her speeches, information about his/her terms of office, and links to the appropriate parties (Magarey, 1999). However, Parliament's utilization of ICT does not always guarantee successes. For example, the United Kingdom (UK) Parliament site was visually dull because it existed to provide raw information, but offered no scope at all for the representatives or the validity of parliamentary decisions (Coleman, 1999).

The term 'e-parliament systems' refers broadly to the implementation of ICT to facilitate and support the work of members of the Thai Parliament for this study. The concepts of e-parliament emerged from the utilization of ICT, specifically the studies of Integrating Internal Systems (IIS) in recent years. According to Lee et al. (2005), Integrating Internal Systems (IIS) and the Government-to-Employee (G2E) relationship were subcategories of Internal Efficiency and Effectiveness (IEE) in the e-government area. G2E relationship includes web-based payroll and health benefits system, while IIS are the ERP-like systems to integrate different functions within a single agency (Lee et al., 2005). Similar to the efforts to integrative Enterprise Resource Planning (ERP) applications in business practices, IEE focuses on delivery systems within the e-government system enabling inter-operability across different functions in that government entity (Evans and Yen, 2005; Lee et al., 2005; Moon and Norris, 2005). Government hopes to apply governmental "best practices" to create substantial savings by allowing for a better management of supply chain issues and information gathering (Evans and Yen, 2005; Cindio and Sonnante, 2005; Ostroff, 2006). In doing so, the investigation of high-level processes, along with their detail-level workflows, to what has been called "government-process change" (GPC) (akin to the efforts of "business-process change" practices by businesses) is necessary (Evans and Yen, 2005; Lee et al., 2005; Scholl, 2005; Ostroff, 2006). However, for the scope of this study, only Integrating Internal Systems (IIS) are explored even though IEE covers both G2E relationship and IIS (Lee et al., 2005; Li, 2005). Therefore, IIS refer to the ERP-like systems that integrate different functions within a single agency, excluding web-based payroll and health benefits system. The study of e-parliament concentrates on incumbents, processes, as well as the relationships that surround a parliament from the ICT aspect. The e-parliament concepts should be viewed from different perspectives. From the technical perspective, Nascimento, Martins, Pinto (2004) discussed a workflow process automation prototype to be used for the information management system of the Portuguese Parliament legislative processes. The system could initiate the use of multi-media information related to the laws' workflow processes, and display the data on PDAs, third generation mobile phones, and desktop personal computers. Last and most interestingly, the user perspective should be taken into account when

developing electronic technologies for the parliamentarians. In the field of Management Information Systems (MIS), Human-Computer Interaction (HCI) concept is a good source in searching for a better approach to investigate e-parliament systems.

Human-Computer Interaction (HCI)

The user perspective of the e-parliament concepts for this study covers only user engagement derived from the concept of HCI (Folstad, Krogstie, Risan, and Moser, 2007). MPs have many roles and functions within parliamentary democracy, and e-parliament technologies impact on them in different ways. An MP serves four different groups: a constituency, a party, a parliament itself, and the nation as a whole (B. Wongthrairat, personal communication, January 7, 2007; Campbell, Harrop, and Thompson, 1999; C. Kanthawongs, personal communication, November 15, 2005; Kanthawongs, 2004c, 2004d, 2005; Kanthawongs and Polatoglu, 2005; N. Pringsulaka, personal communication, January 5, 2007; P.P. Pearyura, personal communication, December 21, 2006). Each of these groups has different expectations of MPs and e-parliament technologies can assist (or frustrate) MPs in different ways. Satisfying all of MPs diverse roles effectively demands energy and commitment from MPs themselves. In order to be effective, MPs need and will increasingly need the support that e-parliament technologies can offer. However, these technologies are not just means for doing existing parliament jobs better: they present opportunities for "government process change" (GPC) of the varied ways MPs act out their roles (Kanthawongs, 2004c, 2004d; Evans and Yen, 2005; Kanthawongs 2005; Kanthawongs and Polatoglu, 2005; Lee et al. 2005; Scholl, 2005). Furthermore, MPs require tools for effective administration, efficient communications, and comprehensive information management, both in terms of information gathering (research) and dissemination (publishing) (Campbell, Harrop, and Thompson, 1999; Kanthawongs, 2004c, 2004d, 2005; Kanthawongs and Polatoglu, 2005). Responsibilities of the House of Representatives (HoRs) elected by constituencies were to spend a large part of their time on their constituency offices, the second part at the Thai Parliament, and the third part at their party offices. They had the capacity to work on the move at other locations for their constituencies, the parliament, and their parties (B. Wongthrairat, personal communication, January 7, 2007; C. Kanthawongs, personal communication, November 15, 2006). HoRs elected by the party list were expected to spend most of their time at the Thai Parliament and their party offices (C. Kanthawongs, personal communication, November 15, 2006; N. Jirason, personal communication, January 1, 2007). Since Senators (Ss) were elected on the national election basis, their responsibilities were similar to those of HoRs elected by constituency. However, Ss' responsibilities in their constituency offices may not be as rigorous as those of HoRs elected by

constituency because Ss were not allowed to campaign (N. Jirason, personal communication, January 1, 2007; S. Thepmanee, personal communication, January 1, 2007). Under the constitution (October 11, 1997), Ss cannot belong to a political party and are not allowed to campaign, but they can "introduce" themselves to the people in their constituency areas (C. Kanthawongs, personal communication, November 15, 2006; N. Jirason, personal communication, January 1, 2007). The researchers concluded that an MP needs a well-organized office in order to work efficiently and communicate effectively with their colleagues and staff, with political interests and actors, with government, with the media, and above all with their constituents (Campbell et al., 1999).

MP Engagement

The first dependent variable is user engagement. The MP engagement concept is derived from the user engagement perspective of Human-Computer Interaction (HCI) studies. "Users" are comprised of end users (primary users), secondary users, and stakeholder users (Maguire, 1998; Folstad et al., 2007). The MPs in this study are considered to be stakeholder users, who are directly affected by the systems or services. HCI has been applied to e-government studies since the late 2000s (Hoening and Christopher, 2001; Griffith, 2001). MP engagement is the degree to which a Thai MP is absorbed in a subject in terms of attention focus, curiosity, fun, and intrinsic interest, which may lead to favorable behavior changes involving cognitive interactions, while the MP experiences less control (Malone and Lepper, 1987; Webster and Ho, 1997; Howze, 2003; McHugh, 2006; Webster and Ahuja, 2006). Then, for this study, user engagement is MP engagement and systems mean e-parliament systems. While MP engagement is made up of three dimensions: attention focus, curiosity, and intrinsic interest, MP engagement can also be generally and shortly defined as the "MP's interest" in e-parliament systems. Research examining these dimensions and a short definition should help to explain how engagement might relate to other constructs in the model.

Integrating Internal Systems (IIS)

Integrating Internal Systems (IIS) are the Enterprise Resource Planning (ERP)-like systems to integrate different functions within a single agency, excluding web-based payroll and health benefits systems (Lee et al., 2005). In other words, IIS are the governmental integrated internal systems. Different legislative information systems for parliamentarians were examined such as the OASIS Network of members of the Canadian House of Common, the teledemocracy system of Norwegian politicians, THOMAS and LIS for the US congress' legislative information system, or the FLOWPASS workflow process automation prototype of the Portuguese Parliament legislative processes (O'Brien and Desramaux,

1991; Ytterstad, Akselsen, Svendsen, and Watson, 1996; Griffith, 2001; Nascimento et al., 2004). These legislative information systems were IIS for the parliamentarians.

System Factors

System factors of e-parliament systems concentrate on the technical perspective of the processes and the relationships that surround the parliament. These factors have been derived from reviewing previous studies on IIS. System factors of this study include e-communication, e-parliamentary library, and e-report.

E-Communication (EC)

The first component of IIS for the system factors of e-parliament systems is the use of electronic communication (e-communication). Ytterstad et al. (1996) conducted a two-year field research implementing a teledemocracy system to support Norwegian politicians. The system's graphical interface made it easy for the politicians to send and receive e-mail. Additionally, public access kiosks (personal-computer-based devices that provide an interface medium for services between users and information providers commonly placing in highly trafficked public areas) are adopted for use in many government buildings (Phythian and Taylor, 2001; Ni and Ho, 2004). Nascimento et al. (2004) built XML schemas to generate XML files of law information systems, which would be used to format data for each possible front-end like PDAs, third generation mobile phones, and desktop personal computers. E-communication technologies for the parliamentarians included in this study are the Internet (WWW), e-mail, Short Message Service (SMS), parliamentary web sites, and parliamentary kiosks (Halstead, 2002; Hoff's, 2004; Kanthawongs, 2004c, 2004d; Smith and Webster, 2004; Kanthawongs and Polatoglu, 2005)

E-Parliamentary Library (EP)

The second component of IIS for the system factors of e-parliament systems is the use of an electronic parliamentary library (e-parliamentary library). The purpose of a parliamentary library is to supply MPs with information rapidly on any matter which comes before them or to which their attention is drawn by their parliamentary duties (Engelfield, 1982). There has clearly been a move away from the traditional method of information retrieval and dissemination towards the digital means. An extremely popular new service for the Australian parliamentarians is the e-clips service, where breaking news is sent to members via e-mail (Brian, 2004). The Parliament library maintains profiles of members' subject interests. If a member was mentioned by name, he/she will automatically receive an e-clip. The members can be made aware about issues before the media approach them to make comments. Additionally, Kanthawongs (2004c, 2004d, 2005; Kanthawongs and Polatoglu, 2005) identified these technologies of e-parliamentary

library at the Thai Parliament: parliamentary web site, network of libraries, and automatic e-clips service (Engelfield, 1982; Serema, 1999; Brian, 2004; Seaton, 2006)

E-Report (ER)

The third component of IIS is the use of an electronic report (e-report). E-report concepts have been derived from reviewing of management of the electronic report (or record) literature. For example, THOMAS and Legislative Information System (LIS), which are centralized legislative systems of the US Congress, allow users especially the parliamentarians to know the status of bills, committee reports, and debates on bills found in the Congressional records (Griffith, 2001). According to Marcella, Baxter, and Moore (2002) and Kanthawongs (2004c, 2004d, 2005; Kanthawongs and Polatoglu, 2005) parliamentary electronic reports for this study include the official reports (of the proceedings of the Parliament and its committees), legislative bills, legislative drafts, and minutes of the meetings from the Parliament legislative processes.

System factors of e-parliament systems have been found to positively influence MP engagement (i.e., Engelfield, 1982; Ytterstad et al., 1996; Guy, 2000; Griffith, 2001). Therefore, the first group of independent variables of this study is the system factors including e-communication, e-parliamentary library, and e-report. Hence, hypotheses one, two, and three are proposed as follows:

Hypothesis 1: E-communication is positively related to MP engagement.
Hypothesis 2: E-parliamentary library is positively related to MP engagement.
Hypothesis 3: E-report is positively related to MP engagement.

E-Government Models in terms of Web Site Development

As part of the enthusiasm on IT in government, best practices and e-government models are being developed and applied to monitor whether governments are on the right track. The maturity model developed by Layne and Lee (2001) has been quoted frequently by various research communities (Yang, 2003; Reddick, 2004; Grant and Chao, 2005). The model illustrates four stages in web site development: state government web sites, transaction web sites, vertical integration web sites, and horizontal integration web sites.

Strategic Use of IT (SU)

The term 'strategy' is applied to the MIS field in various ways. Strategic Information Systems (SIS) involve the needs and sources of information: how information is gathered, how and by whom it is analyzed and interpreted, how and where it is stored, and how it is disseminated (Digman, 2003). Within the strategic context, an argument pursued in this study is that web-based political activities based on

web site development of e-government models are likely to capture the future use of IT applications with the other users of e-parliament systems such as citizens, businesses, other governmental agencies, and the media when performing the core activities of the MPs. Indeed, MPs can gain competitive advantage by efficiently using their web site functions to minimize cost and time during the execution of their services to their people and/or constituencies as well as to reach an intended or expected effect in the execution of their services to their people and/or constituencies. Voters with "high need for cognition" or active voters will seek information about politicians or issues; as a result, they are web visitors for politician's web sites (Pace, 2003). Thus, web-based political activities can be elements in formulating a strategic flag pole for e-parliament systems. Thus, strategic use of IT for this study examines perceived web site functions of the Thai MPs in terms of information provision, networking, participation, and online campaigns or online presentations (Gibson and Ward, 2002; C. Kanthawongs, personal communication, November 1, 2005).

Strategic Use of IT–Information Provision (SU-IP)

Information provision for this research refers to the web's capacity for storing extensive amounts of information that the public and other interested groups, such as the media, can access very quickly (Gibson and Ward, 2002). The measures assess the extent to which MPs will provide basic documentary and organizational information about themselves such as policies and media releases about themselves (Gibson and Ward, 2002). As another example, in the US Representative Constance Morella (R-MD) said that visitors would be able to access timely press release, speeches, and articles about her work on Capitol Hill (Niven and Zilber, 2001). Thus, strategic use of IT in terms of information provision of this study refers to the extent to which an MP provides basic information about himself/herself such as his/her profile, newsletters, media releases, and event calendar of his/her political activities on his/her web sites.

Strategic Use of IT–Networking (SU-N)

Networking for this research focuses on the instant and extensive links between organizations through the qualities of hypertext or hypermedia of the web sites, which are related to the Thai MPs (Gibson and Ward, 2002; C. Kanthawongs, personal communication, November 1, 2005). Network measures assess the perceived number of hypertext links within an MP site such as internal party links, partisan links (pressure groups or related campaign sites), and reference links (i.e., the media or governmental bodies). Thus, strategic use of IT in terms of networking for this study means the extensive links of the Thai MPs' web sites to the parliamentary web sites, political parties, government's web sites such

as Ministry of Interior, other service agencies such as Provincial Waterworks Authority, other MPs' web sites, and newspapers' web sites.

Strategic Use of IT – Participation (SU-P)

Participation for this study refers to the web's capacity to expand their interaction with the web's members and supporters (Gibson and Ward, 2002). Through e-mail, individuals can contact the party directly with policy feedback or discuss it 'live' with party leaders or other members through chat facilities. Thus, the strategic use of IT in terms of participation for this study is described by the extent to which an MP provides online polls, games or gimmicks, bulletin boards or the guest books, and the chat rooms or blogs (online diaries) on their web sites (Wu and Weaver, 1997; Gibson and Ward, 2002; Moon, 2002; Kerbel and Bloom, 2005; Ferguson and Griffiths, 2006).

Strategic Use of IT–Campaign or Presentation (SU-CP)

Online campaign/presentation is described in this research as the web innovative tools for the modern professional parliamentarians for campaign or presentation (Wu and Weaver, 1997; Gibson and Ward, 2002; Norris, 2005). Lusoli and Ward (2005) found that registration opportunities for the European Parliament Election in the UK were offered by government sites and candidates' sites rather than by parties' sites. Therefore, policy stands, campaigns or presentations targeting different groups of voters, web sites' membership registration, sound, live streaming, foreign language, software for disabled persons, and web site updates are proposed measurements of the strategic use of IT in terms of campaign or presentation for this study.

Thus, web-based political activities can be elements in formulating a strategic flag pole for e-parliament systems. When having web sites, strategic use of IT factors increase MP engagement; therefore, it increases the likelihood of creating a positive attitude toward e-parliament systems. Thus, the second group of independent variables of this study is the strategic use of IT factors. The strategic use of IT examines web-based political activities decided by the MPs in terms of information provision, networking, participation, and campaign/presentation. Thus, hypothesis four is proposed in the following:

Hypothesis 4.1: Strategic use of information technology in terms of information provision is positively related to MP engagement.

Hypothesis 4.2: Strategic use of information technology in terms of networking is positively related to MP engagement.

Hypothesis 4.3: Strategic use of information technology in terms of participation is positively related to MP engagement.

Hypothesis 4.4: Strategic use of information technology in terms of campaign or presentation is positively related to MP engagement.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) (Davis, 1989), which was originated from Theory of Planned Behavior (TBP) and Theory of Reasoned Action (TRA), is the most widely used theoretical model for predicting and explaining system usage. Recent rigorous empirical studies (Wixom and Todd, 2005; Srite and Karahanna, 2006) based on TAM and its extension models (Venkatesh, 2000; Venkatesh and Davis, 2000) theorized that an individual's behavioral intention to use a system is determined by perceived usefulness, and perceived ease of use. TAM2 (Venkatesh and Davis, 2000) illustrates the impact of three interrelated social forces (subjective norm, voluntariness, and image) on an individual facing the opportunity to adopt a new system. Interestingly, TAM had been applied to the e-government context (Gefen, Pavlou, Warkentin, and Rose, 2002; Carter and Belanger, 2005; Hung, Chang, and Yu, 2006). Many of the earlier studies examined taxpayers' acceptance of the Internet tax-filing system (Gefen et al., 2002; Hung et al., 2006).

Diffusion of Innovation Theory (DOI or DIT)

Diffusion of Innovation Theory (DOI or DIT) describes innovation adopters' adoption behavior (Rogers, 1995, Lee, 2003). The "diffusion rate of an imitation effect is the result of social interaction or internal communication between early adopters and potential adopters in a social system" (Lee, 2003). Then, the imitation effect can be explained through subjective norm and word of mouth. On the basis of TAM, the extensions of TAM, and DOI, Lee (2003) proposed a framework for Korean ICT diffusion. Lee (2003) pointed out that South Korea had transformed itself from a poverty-stricken country into a leading ICT country because of these ICT diffusion framework's factors.

Individual Factors

On the basis of TAM, the extensions of TAM, DOI, and ICT diffusion framework, individual factors explore how incumbent MPs perceive themselves with the use of e-parliament systems. The factors include usefulness, ease of use, and self-efficacy of individual MPs.

Usefulness (U)

Usefulness is defined for this study as the extent to which one believes that using a system will enhance one's performance (Davis, 1989; Venkatesh and Davis, 2000; Hung et al., 2006; Pavlou and Fygenson, 2006; Srite and Karahanna, 2006).

Ease of Use (EU)

Ease of use for this study is the extent to which one believes that using ICT technologies for e-parliament systems would be effortless (Davis, 1989; Venkatesh and Davis, 2000; Hung et al., 2006; Pavlou and Fygenson, 2006; Srite and Karahanna, 2006).

Self-Efficacy (SE)

On the basis of TAM, the extensions of TAM, DOI, and ICT diffusion framework, and Bandura (1977)'s study, self-efficacy is defined for this study as individual judgments of a person's capabilities to perform a behavior (Venkatesh and Davis, 2000; Agarwal, Sambamurthy, and Stair, 2000).

According to TAM, TRA, and TBP, perceived usefulness and perceived ease of use influence one's attitude towards system usage, which influence one's behavioral intention to use a system (Carter and Belanger, 2005). However, for this study, attitude towards use is replaced with MP engagement because MP engagement provides more specific measurement of the ways humans interact with technologies (Zhang et al., 2002; Zhang and Li, 2005; Zhang et al., 2005). A person's engagement means at particular moments in time, a person does something to assess his/her levels of interest and knowledge (McHugh, 2006). Then, a relationship between usefulness and MP engagement and a relationship between ease of use and MP engagement are measured for this study.

Additionally, the extensions of TAM (Venkatesh, 2002) and ICT diffusion framework (Lee, 2003) have found that self-efficacy is an important determinant of a variety of user perceptions of technologies. These MIS researchers posit that self-efficacy determines perceptions about ease of use and ease of use determines perceptions about intention to use. The researcher of this study places MP engagement before intention to use in the research model and aims to measure MP engagement; as a result, a relationship between self-efficacy and MP engagement and a relationship between ease of use and MP engagement are investigated. Hence, it is hypothesized that:

Hypothesis 5: Usefulness is positively related to MP engagement.
Hypothesis 6: Ease of use is positively related to MP engagement; and,
Hypothesis 7: Self-efficacy is positively related to MP engagement.

Social Factors

On the basis of TAM2, TRA, TBP, DOI, and ICT diffusion framework, social influences offered in this study are how incumbent MPs interact individually with others related to the use of e-parliament systems. The factors include subjective norm and word of mouth.

Subjective Norm (SN)

The first major social influence factors to be studied based on TAM2, TRA, and TBP of social psychology is that of subjective norm. Subjective

norm posits that individuals will be more likely to engage in some activity if others who are in their circle of influence (such as friends, family members, co-workers, boss, or staff members) have approved, accepted, encouraged, and implemented the activity (Lee, 2003; Carter and Belanger, 2005; Hung et al., 2006). Moreover, subjective norm is different from word of mouth because early adopters communicate with potential adopters among the members of a social society over time; as a result, the activity becomes a "norm" or "culture" of the society (Carter and Belanger, 2005). Thus, subjective norm for this study means an MP's perceptions of whether using each e-parliament technology is culturally approved, accepted, encouraged, and implemented by the MP's circle of influence such as the MP assistants, academic experts, co-workers, family members, and friends.

Word of Mouth (WM)

The second social factor for the use of e-parliament systems is word of mouth. This word of mouth concept is originated from DOI and ICT diffusion framework in the management information systems field (Roger, 1995; Lee, 2003). Applied to this research, word of mouth is informal interpersonal messages between the MPs and their circle of influence such as their assistants, academic experts, co-workers, family members, and friends about attitudes and behaviors toward e-parliament systems (Lee, 2003).

DOI (Roger, 1995) and ICT diffusion framework (Lee, 2003) point out that subjective norm and word of mouth influence intention to use. The researcher of this study places MP engagement before intention to use in the research model and aims to measure MP engagement; as a result, a relationship between subjective norm and MP engagement and a relationship between word of mouth and MP engagement are investigated. Thus, hypotheses eight and nine are proposed as follows:

Hypothesis 8: Subjective norm is positively related to MP engagement.
Hypothesis 9: Word of mouth is positively related to MP engagement.

Intention to Use (IU)

Behavioral intention is a motivational factor that captures how hard one is willing to try to perform a behavior (Ajzen, 1991). TAM, the extensions of TAM, and ICT diffusion framework suggest that behavioral intention is the most influential predictor of behavior. Users who enjoy a computer activity report higher intention to use it in the future (Venkatesh and Davis, 2000) and those with higher intrinsic enjoyment show higher intentions to return to a particular web site (Koufaris, 2002). Therefore, a person intends to use the systems if that person engages in the systems

Trust

Trust is a positive belief about the perceived reliability of, dependability of, and confidence in a person, object, or process (Fogg and Tseng, 1999; Gefen, Karahanna, and Straub, 2003; Everard and Galletta, 2006). Trust gives the trustor the confidence that the trustee will behave capably (ability), ethically (integrity), and fairly (benevolence) (Gefen et al., 2003, Pavlou and Fygenson, 2006). Hung et al. (2006) found that trust is a significantly important determinant of attitude toward online tax filing and payment system in Taiwan. Applied to the e-parliament engagement, an MP is willing to rely on the performance of e-parliament systems because he/she has confidence that the system will behave with capability, accuracy, and benevolence (Carter and Belanger, 2005; Hung et al., 2006). Nevertheless, for this study, MP engagement is placed before intention to use and it replaces attitude toward use. Therefore, a relationship between trust and MP engagement is investigated. It is hypothesized that:

Hypothesis 10: Trust is positively related to MP engagement.

As described earlier, intention to use is developed based on TAM, the extension of TAM, and ICT diffusion framework. Intention to use is regarded as an MP's decision to engage in a specified behavior. MP engagement involves MPs' attention focus, curiosity, and intrinsic interest. Users who enjoy a computer activity report higher intention to use it in the future (Venkatesh and Davis, 2000) and those with higher intrinsic enjoyment show higher intentions to return to a particular web site (Koufaris, 2002; Webster and Ahuja, 2006). Thus, the second dependent variable of this study is intention to use. After all, an MP intends to use e-parliament systems if the MP engages in the systems. Hence, it is hypothesized that:

Hypothesis 11: MP engagement is positively related to intention to use.

Continued IS or Post-Adoption Model (PAM)

In recent years, researchers have begun to propose the need to understand continued information system (IS) usage behavior (Bhattacherjee, 2001; Davis and Venkatesh, 2004). IS continuance describes behavior patterns reflecting continued use of a particular IS. It refers to a form of post-adoption behavior or the Post-Adoption Model (PAM) (Bhattacherjee, 2001; Cheung and Limayem, 2005).

Continuance to Use (CU)

Bhattacherjee's post-acceptance model of IS continuance sought to explain an IS user's intention to continue using an IS. Therefore, continuance to use for this study refers to behavior patterns reflecting continued use of e-parliament systems if a user engages in the systems. Actual system usage is

left out in this study because the researcher aims to measure MP engagement. A relationship between MP engagement and continuance to use is tested. Then, the third dependent variable of this study is continuance to use. Hypothesis 12 is as follows:

Hypothesis 12: MP engagement is positively related to continuance to use. Thus, the proposed research model and hypotheses are illustrated in the Figure 1.

Figure 1: Research Model with Hypotheses
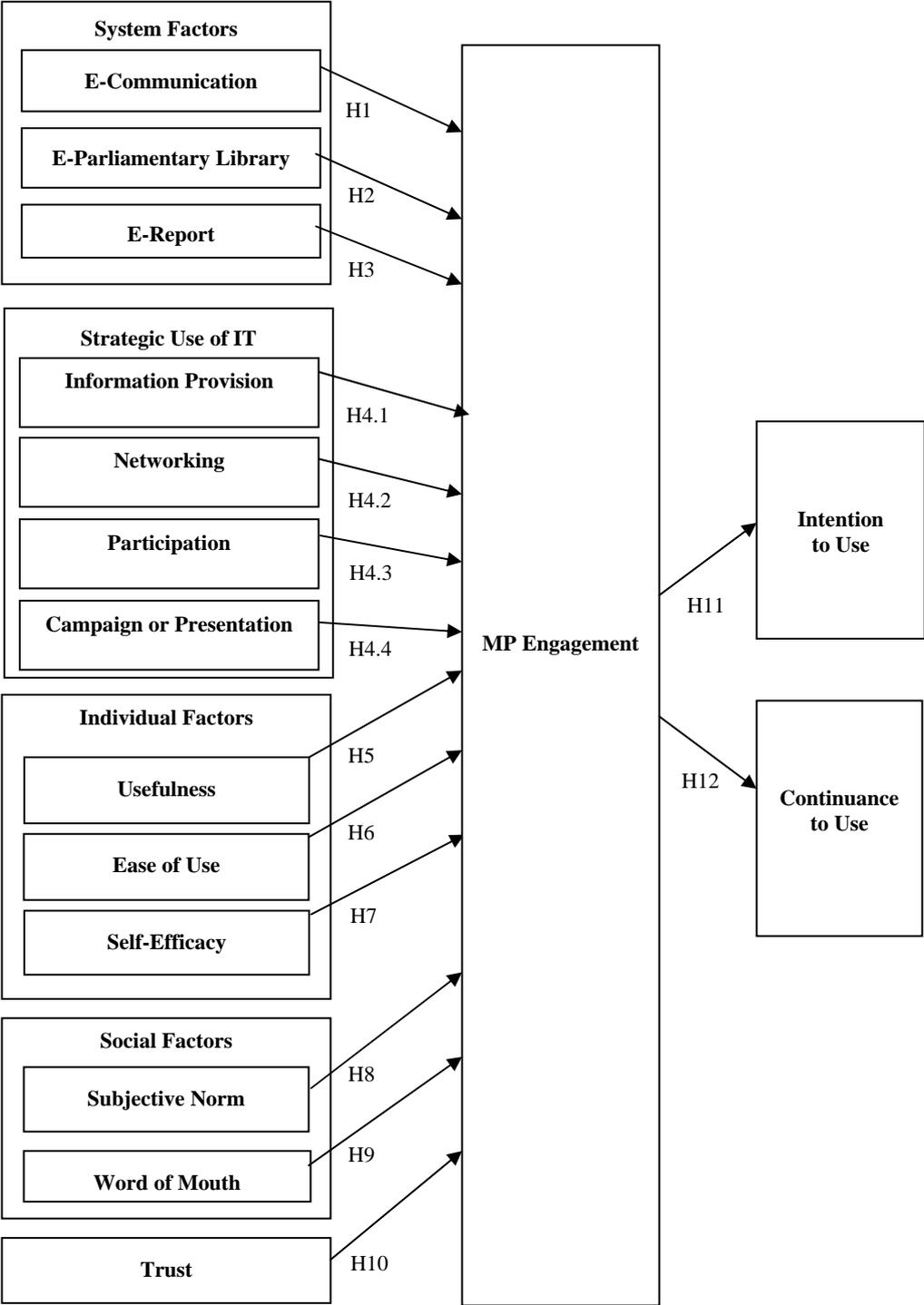
RESEARCH METHODOLOGY

The purposes of this study were to develop an e-parliament engagement model and to report findings from an empirical study of the proposed model. More than 40 semi-structured interviews with MPs, parliamentary IT staff, parliamentary library staff, and MPs' constituencies were conducted to assess when, what, how, and why certain aspects and problems had arisen within the environment for e-parliament systems. The mail survey method was chosen for this study for the different reasons. For example, the MPs who were the target sample of this study lived in different geographical areas throughout Thailand (Mangione, 1995). Before carrying out the large mail survey procedure, a pretest with eight respondents for the qualitative aspects of this study and a pilot test with 107 respondents for the quantitative aspects were conducted to test and refine the questionnaires. Lastly, the posttest in-depth interviews of ten selected MPs who filled out the questionnaire were conducted to clarify the reasons if the results deviated from the hypotheses. Questionnaires were mailed to all 700 parliamentarians (500 members of the Thai House of Representatives (HoRs) elected in the previous national HoR's election in 2005 and 200 Thai Senators (Ss) elected in the previous national Senator's election in 2000) because the MPs' roles and needs were incorporated into the study's literature review. The sampling frame of this research consisted of the most up-to-date directories containing names, addresses, and telephone numbers of the last elected MPs of Thailand obtained from the ten-term MP and updated with the address lists from the Thai Parliament on November 1, 2006.

The original questionnaire was first written in English. An assistant professor in the management area, an associate professor in the communication area, a professor in the management information systems area, and a professor in the methodology area were consulted to assist in the development and validation of the questionnaire. Moreover, the consulted and validated English version was sent to a professional translation center for translation into Thai. Then, the back translation method was used by two certified translators from the professional translation center to ensure that no syntax or semantic biases occurred during the translation from English to Thai and from Thai back into English. However, only the Thai version was distributed to the Thai MPs.

Content validity was stressed during the pretest stage by asking participants to evaluate the questionnaire item-by-item in order to single out pointless questions and suggest new areas for inquiry. The reliability values of the variables presented in the analysis passed the 0.70 (Hair, Anderson, and Tatham, 1998). Construct validity was assessed in a pilot instrument by establishing the factorial validity (Allen and Yen, 1979; Straub, 1989) of the constructs through secondary factor loadings of the scale. The overall assessment of these validation tests was that the questionnaire had acceptable measurement properties.

During this mail survey, the researcher and one of her well-trained staff conducted over 500 telephone calls to follow up, inquire, and facilitate (sending questionnaire through computer and fax machines) the non-responding MPs. Most of the non-responding MPs were commonly occupied with their personal hectic schedules, constituencies, and the general public. Nevertheless, they were willing to answer and send the questionnaire back after the telephone calls. Ten business days following the second mailing, a total of 371 usable questionnaires (after the first and the second full scale mail surveys) had been returned, accounting for the high response rate of 53%. Alpha coefficients depicted high internal consistency of all of the constructs and the group constructs. The acceptance statistical significance level was set at alpha $(\alpha) < .01$.
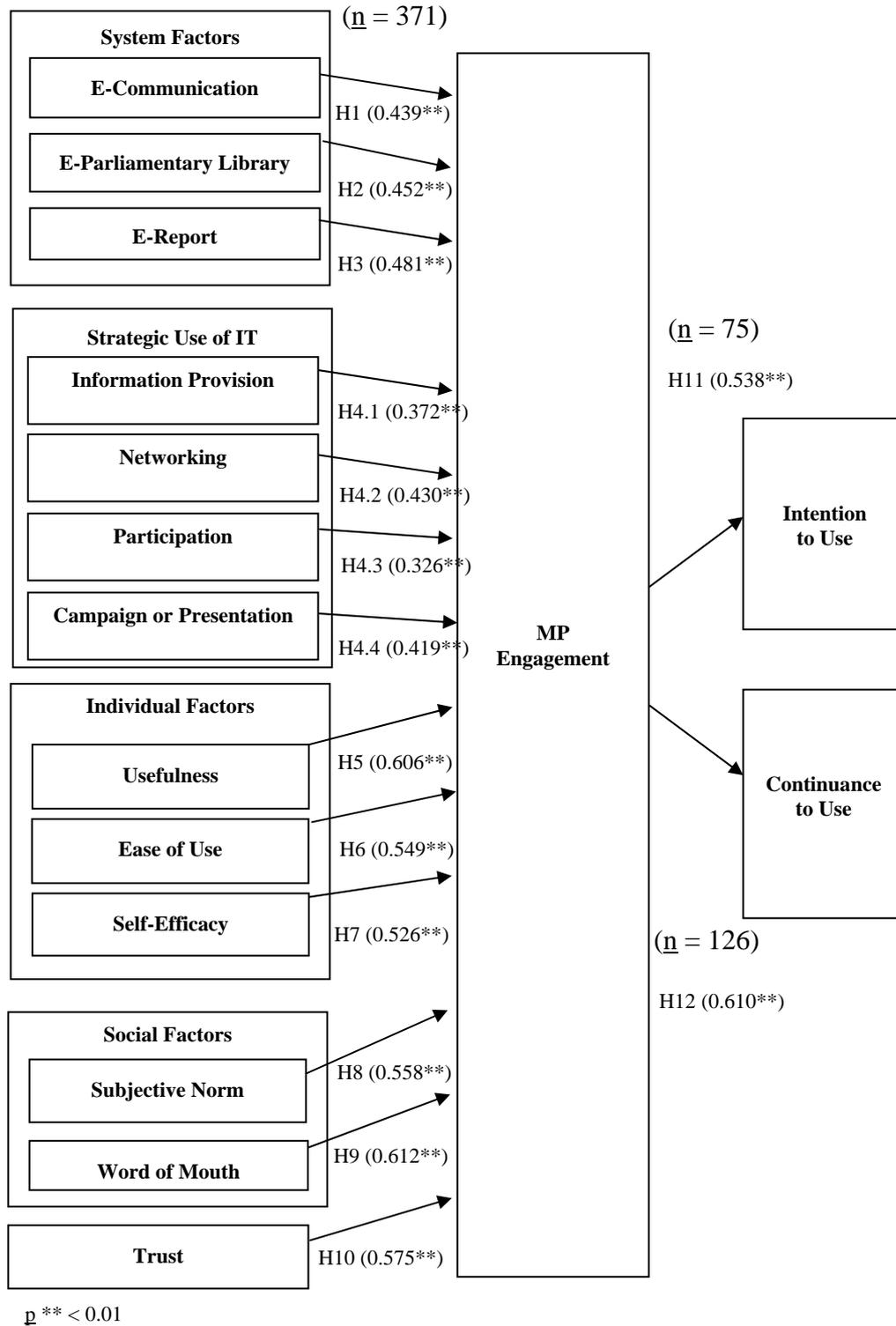
FINDINGS

Among the respondents, the demographic profiles show that most of the participants are in the range of 41 to 50 years old ($\underline{n} = 131$; 35.3 %), 51 to 60 years old ($\underline{n} = 107$; 28.8%), and older than 60 years old ($\underline{n} = 106$; 28.6%) respectively. Almost half have five to ten years of experience ($\underline{n} = 182$; 49.1%) as MPs. The largest group of the respondents is male ($\underline{n} = 335$; 90.3%). More than half of the MPs have education at the master degrees ($\underline{n} = 247$; 66.6%). The majority of the participants are the Members of the House of Representatives (HoRs) elected by constituencies ($\underline{n} = 207$; 55.8%) and almost one-third of them represent the Northeast region ($\underline{n} = 111$; 29.9%) of Thailand. Interestingly, the MPs showed positive attitudes toward the use of e-parliament systems since all of the items and constructs were rated from moderate to high levels. At the end, all the MPs showed their willingness to either use or continue to use e-parliament systems.

Hypothesis Testing

Pearson product-moment correlation coefficients (Coakes and Steed, 2000), multicollinearity test (Pedhazur, 1997; Blaikie, 2003; Richter, West, Van Dick, and Dawson, 2006), multiple regression (MR) analysis (Blaikie, 2003), analysis of variance (ANOVA), simple regression analysis (Blaikie, 2003) were utilized to test hypothesis one (H1) to hypothesis twelve (H12) because the researcher expected that positive relationships existed between these variables and aimed to test their directional hypotheses. The summary of hypothesis testing of H1 to H10 is illustrated in Figure 2.

Figure 2: Results of Hypothesis Testing

(n = 371)

| System Factors |
| E-Communication |
| E-Parliamentary Library |
| E-Report |

H1 (0.439**)
H2 (0.452**)
H3 (0.481**)

| Strategic Use of IT |
| Information Provision |
| Networking |
| Participation |
| Campaign or Presentation |

H4.1 (0.372**)
H4.2 (0.430**)
H4.3 (0.326**)
H4.4 (0.419**)

| Individual Factors |
| Usefulness |
| Ease of Use |
| Self-Efficacy |

H5 (0.606**)
H6 (0.549**)
H7 (0.526**)

| Social Factors |
| Subjective Norm |
| Word of Mouth |

H8 (0.558**)
H9 (0.612**)

| Trust |

H10 (0.575**)

MP Engagement

(n = 75)

H11 (0.538**)

Intention to Use

(n = 126)

H12 (0.610**)

Continuance to Use

p ** < 0.01

DISCUSSION AND CONCLUSION

Brief Overview of the Study

The analysis of Pearson product-moment correlation coefficients presented that all of 12 hypotheses were supported. Additional information from the analysis of multiple regression revealed that trust (T), usefulness (U), word of mouth (WM), and strategic use of IT in terms of networking (SU-N) were significant predictor variables of MP engagement

(ME). Furthermore, the information from the analysis of simple regression showed that MP engagement (ME) was a significant predictor for intention to use (IU) and continuance to use (CU). These results have several implications for theory and practice; however, some results were unexpected and perhaps need more explanation. Summary of the significant results are presented in Table 1 and 2.

Table 1: Summary of Significant Results (MP Engagement Part)

Outcome	Predictor	r (and its order)	Interpretation	r² (and its order)	Hypothesis (and its support)	Tolerance	VIF	β (and its order)
ME	EC	0.439^{**} (9)	Medium	19.27% (9)	H1 (Yes)	.433	2.312	0.078 (5.1)
	EP	0.452^{**} (8)	Medium	20.43% (8)	H2 (Yes)	.323	3.099	-0.002 [3]
	ER	0.481^{**} (7)	Medium	23.14% (7)	H3 (Yes)	.310	3.229	0.022 (9)
	SU-IP	0.372^{**} (12)	Medium	13.84% (12)	H4.1 (Yes)	.458	2.182	-0.035 [2]
	SU-N	0.430^{**} (10)	Medium	18.49% (10)	H4.2 (Yes)	.293	3.411	0.200^{**} (4)
	SU-P	0.326^{**} (13)	Medium	10.63% (13)	H4.3 (Yes)	.297	3.365	-0.161 [1]
	SU-CP	0.419^{**} (11)	Medium	17.56% (11)	H4.4 (Yes)	.321	3.113	0.056 (7)
	U	0.606^{**} (2)	Large	36.72% (2)	H5 (Yes)	.405	2.468	0.225^{**} (2)
	EU	0.549^{**} (5)	Large	30.14% (5)	H6 (Yes)	.274	3.655	0.022 (8)
	SE	0.526^{**} (6)	Large	27.67% (6)	H7 (Yes)	.288	3.471	0.078 (5.2)
	SN	0.558^{**} (4)	Large	31.14% (4)	H8 (Yes)	.430	2.327	0.058 (6)
	WM	0.612^{**} (1)	Large	37.45% (1)	H9 (Yes)	.422	2.369	0.204^{**} (3)
	T	0.575^{**} (3)	Large	33.06% (3)	H10 (Yes)	.627	1.594	0.281^{**} (1)

$\underline{R} = 0.779$; $\underline{R}^2 = 0.606$; $\underline{n} = 371$; $\underline{p}$ ** < 0.01

Table 2: Summary of Significant Results (Intention to Use Part and Continuance to Use Part)

Outcome	Predictor	r	Interpretation	r^2 and its order	Hypothesis (and its support)	Tolerance	VIF	β
IU	ME	0.538**	Large	28.94%	H11 (Yes)	1.000	1.000	0.538**
CU	ME	0.610**	Large	37.21%	H12 (Yes)	1.000	1.000	0.610**

p ** < 0.01
For IU as the outcome: r = 0.538; r^2 = 0.289; n = 75
For CU as the outcome: r = 0.610; r^2 = 0.372; n = 126

Note: (for Table 1 and Table 2)
E-Communications (EC), E-Parliamentary Library (EP), E-Reports (ER), Strategic Use of IT - Information Provision (SU-IP), Strategic Use of IT - Networking (SU-N), Strategic Use of IT - Participation (SU-P), Strategic Use of IT - Campaign or Presentation (SU-CP), Usefulness (U), Ease of Use (EU), Self-Efficacy (SE), Subjective Norm (SN), Word of Mouth (WM), Trust (T), MP Engagement (ME), Intention to Use (IU), Continuance to Use (CU)

DISCUSSION

"Medium" Correlation Coefficients of the System Factors and the Strategic Use of IT Factors

On the basis of the previous literature review, hypothesis one (H1) to hypothesis three (H3) were related to system factors including e-communication (EC), e-parliamentary library (EP), and e-report (ER) of e-parliament systems and hypothesis four point one (H4.1) to hypothesis four point four (H4.4) were related to perceived web site functions of the Thai MPs in terms of information provision (H4.1), networking (H4.2), participation (H4.3), and online campaign or online presentation (H4.4). The results of "medium" support for hypothesis one (H1) to hypothesis four point four (H4.4) may be interpreted that even though the MPs show positive attitudes toward the use of e-parliament systems and the strategic use of IT, they may not be the actual users of the system factors and the strategic use of IT factors. So, "medium" support is shown instead of "high" support. Since these system factors concentrate on the technical perspective of the processes and the relationships that surround the parliament, the factors are likely to require technical and system skills (Lee and Lee, 2006) in order to fully utilize the benefits of the factors. The system factors consisting of e-communication (EC), e-parliamentary library (EP), and e-report (ER) are likely to be used by the Thai MPs' assistants, the Thai MPs' academic experts, the Thai MPs' staff, and the Parliament staff. While Canadian, Norwegian, American, and Portuguese parliamentarians were using these system factors by themselves (O'Brien and Desramaux, 1991; Ytterstad et al., 1996; Griffith, 2001; Nascimento et al., 2004), the Thai parliamentarians were likely to rely on their assistants, academic experts, and staff in using these system factors (N. Pringsulaka, personal communication, January 5, 2007; W. Masana, personal communication, January 7, 2007; W. Sittithum, personal communication, January 4, 2007). While the MPs tend to be the deciders or decision makers for features of their web sites, they are unlikely to be their own web sites' developers or users. The MPs were unlikely to conduct their web sites' maintenance or updates by themselves. The web sites' developers, the MPs' assistants, the MPs' staff, and the Parliament IT staff often performed those web sites' maintenance or updates (N. Pringsulaka, personal communication, January 5, 2007; W. Masana, personal communication, January 7, 2007; W. Sittithum, personal communication, January 4, 2007).

Moreover, the second reason why hypothesis one (H1) to hypothesis four point four (H4.4) showed "medium" correlation coefficients might be that the responding MPs were unlikely to be computer literate. Previous studies explained that computer literacy refers to whether an individual could operate a computer and possess the requisite keyboard skills and software and hardware knowledge (Kanter, 1988; Lee and Lee, 2002). Referring to the profiles of the respondents, most of the participants are in the range of 41 to 60 years old. These middle-age and older-

age MPs may not be trained and have not yet become familiar with the use of the system factors such as the Internet or e-mail. MPs who can efficiently and effectively use their web site development are likely to gain competitive advantage, this might not apply to the context of the Thai MPs at the moment since most of them might be low in computer literacy and might not be able to fully utilize the benefits of the strategic use of IT factors. Therefore, they tend not to show "high" correlation coefficients for hypothesis one (H1) to hypothesis four point four (H4.4).

"High" correlation coefficients

Hypothesis five (H5) to hypothesis ten (H10) show "high" correlation coefficients. This conforms with the previous literature review that individual factors and social factors are positively related to MP engagement (ME). On the basis of the Technology Acceptance Model (TAM) (Davis, 1989), which originated from Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TBP), and Diffusion of Innovation Theory (DOI or DIT) (Roger, 1995; Lee, 2003), individual factors and social factors can be applied to the Thai MPs for e-parliament systems. Moreover, trust theories (Gefen et al., 2003; Pavlou and Fygenson, 2006) are also applicable to the Thai Parliament context. Additionally, hypothesis eleven (H11) and hypothesis twelve (H12) display "high" levels of support because the previous studies on intention to use (IU) and continuance to use (CU) are suitable for the Thai Parliament context. TAM, TRA, TBP, and Post-Adoption Model (PAM) are the bases for this intention to use (IU) and continuance to use (CU).

Possible Effect of Multicollinearity

In spite of the positive findings reported above, the researcher suggests the need to be cautious. When predictor variables are themselves highly correlated, the regression procedure is unable to sort out the contributions of each one (Blaikie, 2003). This is the problem of multicollinearity. The results of correlation coefficients (r) and standardized regression coefficients (β) in Table 1 does not reveal that all "high" correlation coefficients are significant ([**]) at the 0.01 level. Statistically, there might be multicollinearity among predictor variables in the multiple regression (MR) analysis. On the basis of Blaikie (2003) and Muijs (2004), the multicollinearity diagnostics of this study point out the possibility of multicollinearity among system factors [e-communication (EC), e-parliamentary library (EP), e-report (ER)], strategic use of IT [information provision (SU-IP), networking (SU-N), participation (SU-P), campaign or presentation (SU-CP)], individual factors [usefulness (U), ease of use (EU), self-efficacy (SE)], and social factors [subjective norm (SN) and word of mouth (WM)] exist since the predictor variables have the VIF values of more than two (2) and tolerance values of less than 0.6.

While trust (T), word of mouth (WM), and usefulness (U) suggest "high" correlation coefficients from Pearson product-moment correlation coefficient analysis, networking from strategic use of IT factors display "medium" correlation coefficients. One explanation for this deviation may be that although the MPs are highly interested in having a number of links in their web sites, they do not pay much attention to what types of links should be included. This specific knowledge should be researched and proposed to the MPs by the MPs' assistants, the MPs' web site developers, the MPs' staff, and the parliamentary IT staff.

Interpretation of Standardized Regression Coefficients (β)

The standardized regression coefficient (β) parameters can be viewed to see which of the predictor variables have the most relative influence on the dependent variable, MP engagement, especially when all of the predictor variables in this study are measured using the same ordinal five-point Likert scale (Miles and Shevlin, 2001). Therefore, the order of the significant influence predictor variables on MP engagement are (1) trust ($\beta = 0.281$), (2) usefulness ($\beta = 0.225$), (3) word of mouth ($\beta = 0.204$), and (4) strategic use of IT in terms of networking ($\beta = 0.200$) respectively.

Implications for Theories

Building upon previous studies in Integrating Internal Systems (IIS), Human-Computer Interaction (HCI), e-government models, Technology Acceptance Model (TAM), Post-Adoption Model (PAM), Diffusion of Innovation Theory (DOI or DIT), and trust theories, this study further introduces the concept of user engagement of the governmental integrated internal systems, with a particular focus on its relationships between e-parliament systems and user engagement for adopters and potential adopters. The sample group consisted of real MPs who had used or had not used e-parliament systems. The model explains 60.6% of the variance ($R^2 = 0.606$) for the MP engagement part and 28.9% of the variance ($r^2 = 0.289$) for the intention to use part and 37.2% of the variance ($r^2 = 0.372$) for the continuance to use part in e-parliament system initiatives. It extends previous adoption research by collecting and analyzing data from a pool of the MPs that are the direct representatives of the population. Such a sample provides insight into the users' perceptions of this unique governmental integrated internal system.

Future Research

Future studies include testing the questionnaire with other actual users of e-parliament systems such as the MPs' assistants, the MPs' staff, the MPs' academic experts, and the Parliament staff because these groups of people are likely to be other important actual users of the systems. Then, the

results from these different groups of actual users can be compared for further findings. Due to a possible multicollinearity effect of this study, a more complex model may be necessary. For instance, the relationship between self-efficacy (SE) and ease of use (EU) (r = 0.818) and the relationship between e-report (ER) and e-parliamentary library (EP) (r = 0.785) might be added into the model and more advanced techniques for statistical analysis (i.e., multilevel modeling, stepwise regression, and structural equation modeling) can be applied. Furthermore, it would be very valuable to study the specific components of trust such as ability, integrity, and benevolence (Gefen et al., 2003; Pavlou and Fygenson, 2006) as they highly relate to user engagement of these e-parliament systems. Referring to e-government practice categories (Lee et al., 2005), this study aims to study e-parliament systems only in terms of Integrating Internal Systems (IIS). Therefore, a future conceptual model for e-parliament systems of the Thai Parliament can be extended to cover web-based payroll and health benefits system of the MPs in order to make a greater contribution to government Internal Efficiency and Effectiveness (IEE) studies. Finally, research should also be conducted on other countries. If the research model of this study is tested with MPs from different cultures such as the American culture and Asian cultures, both subjective norm and word of mouth might have higher significant relative influence on MP engagement.

Implications for Practice
Suggestions to the MPs

On the basis of Lee and Lee (2002) research, both computer literacy and information literacy are essential for executives in conducting today's activities. An MP who does not know how to use computers and the Internet will be low in computer literacy and information literacy because he/she cannot instantly know about information that may affect his/her political activities. Although the MPs can ask his/her assistants and staff to type and post his/her message, the gap between the MPs and the constituencies gets smaller, today's MPs must face the networked e-global age. Today's MPs cannot be effective without communicating frequently through the Internet. The MPs now need to learn from other MPs who are using their web sites in many effective ways. The constituencies will soon be able to put more trust in a web site when they watch the MP's video clip in the MP's homepage. Sharing quality information through the Internet will soon be as important to the MP as receiving quality reports from assistants, staff, and academic experts.

Suggestions to Governmental Policy Makers

Although several studies pointed out the lack of appropriate performance measurement for e-government services (Steyaert, 2004), four important antecedents (trust, usefulness, word of mouth, and strategic use of IT – networking) of user engagement of e-parliament services were identified. These four factors can be effectively evaluated as performance indicators for the performance of e-parliament services. Additionally, these four factors are significant predictor variables for both adopters and potential adopters. Bhattacherjee (2001) indicated that user continuance to use are determined by satisfaction with past use experience. Accordingly, to retain e-parliament service adopters and attract more potential adopters, the researcher suggests to policy makers that marketing strategies for e-parliament services seeking to increase user loyalty and retention can focus on these points. Alternatives include improving user interface of e-parliament services, enhancing services security mechanisms, employing mass media marketing, and increasing the availability of necessary hardware and software for e-government service use. Additionally, for supporting and marketing e-government service adoption, the research suggests that policy makers should emphasize the advertising of adopters' successful experiences to attract more potential adopters. The researcher suggests that policy makers should invest more user training and incentives to attract more potential adopters. Furthermore, policy makers should make plans of action on enhancing face-to-face communication among academic experts, assistants, peers, and family members for potential adopters.

Suggestions to Governmental Agencies

Important predictor variables of the e-parliament system use in sequence are trust, usefulness, word of mouth, and strategic use of IT – networking. To successfully implement e-parliament systems given constraints in resources, the researcher suggests that governmental agencies set priorities based on the relative importance of the factors. Governmental agencies should develop implementation strategies that emphasize user trust and the usefulness of e-parliament services. To further benefit from word of mouth, the researcher suggests that Parliament agencies implement marketing strategies that seek to produce face-to-face communication impact among academic experts, assistants, peers, and family members of the MPs. For example, encouraging e-parliament services adopters to enhance their peer influence through various channels, and endorsing e-parliament service by well-known stars.

Suggestions to System Developers

Trust, usefulness, and strategic use of IT are key factors influencing user engagement of e-parliament systems. Therefore, the researcher suggests that system developers should reinforce security mechanisms for e-parliament systems, design a useful information system matching the MPs' roles and the MPs' needs, and develop the MPs' web sites with necessary links such as links to parliamentary web sites, political parties' web sites, government's web sites (i.e., http://www.moi.go.th - Ministry of Interior),

other service agencies (http://www.pwa.co.th – Provincial Waterworks Authority), web sites of other MPs, and newspapers' sites. Moreover, system developers can focus on developing effective user guidance, continuously improving security mechanisms, and using community of practice on the Internet for promoting e-parliament services and sharing user experiences.

LIMITATIONS OF THE RESEARCH

This study has several limitations. Although the sample size of 700 previous members of the Parliament does not consist of current users of e-parliament systems, it is a legitimate representation of the population because the e-parliament systems had been in place for them for more than 4 years. According to IS or PAM, continuance to use should be based on behaviors that follow acceptance or actual system usage (Roger, 1995). Also, before examining continuance to use, user satisfaction has often been recommended as a determinant for continuance to use. Nevertheless, in this study, continuance to use was determined by MP engagement because the researcher was limited to investigate relationships surrounding MP engagement rather than acceptance, actual system usage, or user satisfaction of e-parliament systems, and to know whether there were potential adopters and adopters of e-parliament systems. Moreover, since this study may have multicollinearity problems, further research may aim to select different relationships or more advanced techniques for statistical analysis such as multilevel modeling and structural equation modeling (SEM). Finally, longitudinal studies are also required to observe continuous or discontinuous users of e-parliament systems' services.

CONCLUSION

The e-parliament project has given hope to pave the way for better legislative information management. The objectives of this study are to investigate an e-parliament engagement model and to report findings from an empirical study of the researcher's model. The researcher proposes a comprehensive theoretical framework to identify how to enhance MP engagement of e-parliament systems with a set of 13 predictor variables which are system factors (including e-communication, e-parliamentary library, and e-report), strategic use of IT (in terms of information provision, networking, participation, and campaign/presentation), individual factors (usefulness, ease of use, as well as self-efficacy), social factors (subjective norm along with word of mouth), and trust. Then, MP engagement is the predictor of either intention to use or continuance to use. The study applied the mail survey method, qualitative analysis, pretest in-depth interviews, and posttest in-depth interviews. Listed in order of significance, the predictor variables on MP engagement of e-parliament systems are trust, usefulness, word of

mouth, and strategic use of IT in terms of networking. Building upon previous studies in Integrating Internal Systems (IIS), Human-Computer Interaction (HCI), e-government models, Technology Acceptance Model (TAM), Post-Adoption Model (PAM), Diffusion of Innovation Theory (DOI or DIT), and trust theories, this study further introduces the concept of user engagement of the governmental integrated internal systems. Even though the MPs show positive attitudes toward the use of e-parliament systems, they may not be the actual users of the systems. An MP who does not know how to use computers and the Internet will be low in computer literacy and information literacy because he/she cannot instantly know about information that may affect his/her political activities. Government policy makers, government agencies, and system developers should develop strategies and systems of e-parliament services that emphasize trust, usefulness, word of mouth, and strategic use of IT in terms of networking. Future studies include testing the questionnaire with other actual users of e-parliament systems such as the MPs' assistants, the MPs' staff, the MPs' academic experts, and the Parliament staff because these groups of people are likely to be other important actual users of the systems. The researcher hopes that the results of this study will help enhance engagement of the Thai parliamentarians in using e-parliament systems.

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