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Factors that Persuade and Deter Membership in Professional Computing Associations

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Abstract: A decision to join a professional computing association is, generally, considered a decision to affiliate with a group. The value of a professional association can be measured in terms of services it offers. Professional computing associations play a critical role in advancing professional growth of its members by offering a variety of services such as career development, networking opportunities, and dissemination on current advancements in the profession. In particular, the computing discipline consists of several sub-disciplines each having substantial differences among them, which creates considerable differences among computing professionals. Due to differences among computing professionals, it is important for computing professional associations to identify services that are valuable for its members and help in retaining their membership. Towards that, in this paper, we identify factors that persuade and deter membership in professional computing associations. We present results of a survey conducted with the Association of Information Technology Professionals' members, with primary focus on qualitative analysis of responses to open-ended questions. Persuading factors identified are networking opportunities, dissemination of technical information and advancement in the field, professional development programs, advocacy opportunities, leadership and community service opportunities, and reputation of the association. Deterring factors are solicitation and unwarranted emails, timing and location constraints of events, lack of a local chapter, and behavior and characteristics of peer members in the association.

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Abstract

A decision to join a professional computing association is, generally, considered a decision to affiliate with a group. The value of a professional association can be measured in terms of services it offers. Professional computing associations play a critical role in advancing professional growth of its members by offering a variety of services such as career development, networking opportunities, and dissemination on current advancements in the profession. In particular, the computing discipline consists of several sub-disciplines each having substantial differences among them, which creates considerable differences among computing professionals. Due to differences among computing professionals, it is important for computing professional associations to identify services that are valuable for its members and help in retaining their membership. Towards that, in this paper, we identify factors that persuade and deter membership in professional computing associations. We present results of a survey conducted with the Association of Information Technology Professionals' members, with primary focus on qualitative analysis of responses to open-ended questions. Persuading factors identified are networking opportunities, dissemination of technical information and advancement in the field, professional development programs, advocacy opportunities, leadership and community service opportunities, and reputation of the association. Deterring factors are solicitation and unwarranted emails, timing and location constraints of events, lack of a local chapter, and behavior and characteristics of peer members in the association.

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1. INTRODUCTION

An individual can be described as a professional if he or she belongs to a well-defined group that requires its members to possess some required qualifications, technical knowledge and capabilities to perform specific skilled tasks to solve real world problems (Aitchison, 2007; Carlsson, 2006). A professional association is defined as "any scientific, scholarly, academic, or professional organization composed of individual members who seek to benefit from collective activities such as education, networking, or

advocacy" (Dalton & Dignam, 2007). Professional associations play a crucial role in fostering and strengthening professional development of individuals. Professional associations strive to advance the body of knowledge in their respective fields and provide a variety of services to their members to advance their professional developments (Fowler, 1999).

The value of membership in a professional association can be measured in terms of quality of services provided to its members. Professional associations can offer training workshops to help their members gain new skills to advance their career. Professional associations can help members to remain current with developments in the profession by disseminating information on new research findings, best practices, and innovative solutions. Professional associations can help members build their professional relationships by hosting networking events at local, regional, and national levels. Professional associations can provide opportunities for their members to contact other members of similar interest and provide leadership opportunities to progress their professional interest within their community.

The four major professional computing associations – the Associations for Computing Machinery (ACM), Association for Information Systems (AIS), Association for Information Technology Professionals (AITP), and Computer Society of the Institute for Electrical and Electronic Engineers (IEEE-CS) – define the computing discipline as any activity that requires, benefits from, or creates computers (Shackelford et al., 2005). Computing professionals may perform tasks such as designing and constructing software systems; gathering, managing, presenting, processing, and retrieving relevant information; conducting scientific studies using computers; or creating intelligent computer systems (Shackelford et al., 2005). The computing profession includes following major sub-disciplines: computer science, computer engineering, information systems, information technology, and software engineering (Shackelford et al., 2005).

Though there is common core shared among sub-disciplines of the computing profession, each sub-discipline has different professional identities, standards, and practices (Denning, 1999). These differences create significant challenges for professional computing associations in regards to offering collective services to its members. These differences essentially mean that each sub-discipline would need separate educational and professional development programs, industry licensures and certifications, professional standards and ethics, networking and information channels, advocacy and leadership opportunities.

Nowadays, there are wide varieties of options for computing professionals, from the aforementioned general professional computing associations to specific user groups (e.g., Linux Users Groups). Diversity among computing professionals and availability of various computing associations makes it difficult for associations to retain its members. To increase members' commitment, professional computing associations need to identify services that are crucial for its members (Gruen, Summers, & Acito, 2000). For identifying such crucial services, one must understand factors that persuade and deter a computing professional from joining and maintaining membership with a professional computing association. Thus, the objective of this paper is identifying factors that influence computing professionals' decisions to join and maintain membership in a professional computing association.

2. RELATED WORK

The most extensive study in the professional association membership literature is the one conducted by Dalton and Dignam (2007). Dalton and Dignam (2007) conducted a survey study involving 18 different membership associations. None of the major computing professional associations were part of those 18 associations, however. The survey received 16,944 responses from current members, former members and those who have never been members. The survey data was analyzed to identify individuals' decision-making patterns on whether to join or not join an association.

Dalton and Dignam (2007) indicate that members do not make decisions to join solely based on cost-benefit analysis; rather it is a decision to affiliate with the association. A decision to affiliate with an association involves assessment of shared identity (i.e., sharing an important quality with the association) and assessment of value generated by

sharing a common bond (Dalton & Dignam, 2007). Initial decision to affiliate eventually evolves into shared commitment that leads to extensive participation with the association and generation of 'good-of-the-order' benefits (Dalton & Dignam, 2007).

Dalton and Dignam (2007) also suggest that most individuals consider networking opportunities, technical information dissemination, and professional development programs the most important services provided by an association. Further, current members consider dissemination of current happenings and advancement of their profession and advocacy opportunities also important services. Former members consider establishing professional standards of practice as an important aspect of a professional association. Non-members consider career development opportunities as important services. Current members were least concerned about certification programs offered. Former members were least concerned about receiving information about developments in their profession. Non-members were least concerned about public recognition of their profession and advocacy efforts.

While the study conducted by Dalton and Dignam (2007) is quite extensive, its results cannot be directly extended to professional computing associations. Their study involved a very broad range of individuals and associations whose needs and purpose could be considerably different from that of computing professionals and professional computing associations. Therefore, more research needs to be conducted in identifying factors that influence and deter computing professionals to join an association. Anticipated benefits of such study would be identification of unique factors that may reveal motivations and needs of computing professionals.

3. RESEARCH METHODOLOGY

To investigate the factors that affect computing professionals' decisions to join a professional association, a survey-based approach was adopted. For that purpose, the present study focused on members of the Association of Information Technology Professionals (AITP) (formerly Data Processing Management Association). AITP has being serving the computing profession since 1949 and had approximately 3,367 professional members and 2,524 student members when this study was conducted. AITP was selected for the current study because it attracts members from diverse backgrounds in the computing field and because of its rich history of leadership and service to the profession.

Survey items for the instrument were first developed based on an extensive review of professional association literature. Next, the instrument underwent a critical review by a focus group of computing professionals to clarify the intent and language of the survey items. After the focus group, the survey was reviewed by national board members of AITP serving as an expert review of the items. Modifications were made to the instrument to reflect the information gathered by both groups.

The final instrument has 52 items and was organized into seven categories: career enhancing opportunities; information access and dissemination services; professional networking opportunities; communication services; leadership and community service opportunities; advocacy services and opportunities; and member discount services. Additionally, the instrument included several demographic items and two free form items designed to collect additional information from respondents. The open-ended questions asked participants to "Please describe any other factors that persuade you to become a member in professional associations" and "Please describe any factors that deter you from joining professional associations".

The investigators made necessary arrangements to ensure that AITP members receive information about survey by posting link to the survey in the AITP publication *Information Executive*, requesting AITP leaders to encourage their members to respond to the survey, making survey available for period of 3 months, and sending reminder emails to members twice during 3-month period. In spite of above efforts, only two-hundred twenty valid responses were received, which is about 6% of professional members in AITP. Descriptive statistics of the survey, interpretations of findings, and recommendations for AITP have been published (Ritzhaupt, Umapathy, & Jamba, 2008).

In this paper, we primarily focus on qualitative analysis of responses received from survey respondents on two open ended questions. Below we have provided summary of findings from the descriptive statistics analy-

sis of the survey data. Table 1 provides the summary of scores for seven major categories. Table 2 provides the top five items that received highest scores across all seven categories, which can be considered the most preferred services by computing professionals. Table 3 provides the top five items that received lowest scores, which can be considered the least preferred services. Mean scores (see tables 1, 2 and 3) indicate the average of response for respective categories. Survey response were recorded using a modified Likert scale (1-Strongly Disagree; 2-Disagree, 3-Neither agree, nor disagree, 4-Agree, 5-Strongly Agree).

Table 1. Summary of scores for seven categories

Categories	Mean	SD
1. Networking opportunities	4.16	0.54
2. Advocacy opportunities	4.13	0.54
3. Leadership and community service opportunities	4.10	0.56
4. Career enhancing opportunities	4.04	0.48
5. Communication services	4.00	0.55
6. Information access and dissemination services	3.99	0.51
7. Member discount services	3.84	0.70

Note: SD – standard deviation

Table 2. Top five highest items across categories scores in order

Items	Mean	SD
1. Access to local meetings with relevant speakers	4.64	0.55
2. Awareness of new technological developments	4.55	0.59
3. To promote the profession	4.52	0.61
4. To impact the profession	4.35	0.67
5. To receive career enhancing advices	4.33	0.64

Note: SD – standard deviation

Table 3. Top five lowest items across categories scores in order

Items	Mean	SD
1. Opportunities to promote new products	3.32	0.94
2. Access to special discounts on financial services	3.45	0.93
3. Access to special discounts on group insurance plans	3.54	0.97
4. Access to part-time/ internship employment listings	3.7	0.91
5. Dissemination of conference call for papers	3.72	0.84

Note: SD – standard deviation

4. QUALITATIVE ANALYSIS

The two free-form response items focused on factors that persuade and factors that deter individuals to join and maintain membership in professional computing associations. Of the 220 survey respondents, 87 provided responses to either of the two free-form response items. The responses were analyzed using a constant comparative method (Glaser, 1965, 1967).

The constant comparative qualitative procedure was selected because it "is concerned with generating and plausibly suggesting (but not provisionally testing) many categories, properties, and hypotheses about general problems" (Glasser, 1967, p. 104). The constant comparative method involves four stages (Glasser, 1967): 1) comparing incidents applicable to each category, 2) integrating categories and their properties, 3) delimiting the theory, and 4) writing the theory. Each incident in this research was a computing professional's response to one of the two open-ended questions, which were compared to all other responses during each iteration of the data coding process. Members of the research team independently coded each aspect of the responses, and subsequently merged their categories and properties together after review by other members of the team. The themes emerging from the categories and properties were then used to generate descriptions of factors that persuade and deter professional membership in computing associations.

Factors that persuade

In statements responding to the item about what persuaded a person to join and maintain membership in a professional association; fourteen initial concepts were integrated into five main themes: Personal Growth; Reputation; Contribution; Relationships; and Career Education. Table 4 (see Appendix A) provides the definitions for the persuasive themes as well as examples of respondents' comments for each type.

Table 5. Emergent themes that persuade

Emergent theme	n	%
Personal Growth	13	15
Reputation	7	8
Contribution	13	15
Relationships	55	63
Career Education	41	47

Note: Response frequencies are out of 87.

Respondents produced an average of 11.86 words (*SD* = 10.52) for this item. Table 5 illustrates the frequencies of emergent themes that *persuade* individuals to join and maintain membership. The most frequently cited theme was relationships at 63%, followed by career education at 47%. Both personal growth (15%) and contribution (15%) emerged at comparable levels while reputation (8%) was the least cited theme.

Factors that deter

In statements about deterrents, fifteen initial concepts were integrated into five main themes: Time and Location Constraints; Chapter Deficiencies; Solicitation; Total Cost of Membership; and Meeting and Membership Composition. Table 6 (see Appendix A) provides the definitions for the deterring themes as well as examples of respondents' comments for each type.

Respondents produced an average of 14.37 words (*SD* = 17.15) for this item. Table 7 illustrates the frequencies of emergent themes that *deter* individuals to join and maintain membership in professional associations. The two most frequently cited themes included the total cost of membership (40%), closely followed by time and location constraints (39%). The next two common deterrent themes were meeting and membership composition and chapter deficiencies at 24% and 20%, respectively. The least frequently cited deterrent was solicitation (9%).

Table 7. Emergent themes that deter

Emergent theme	n	%
Time and Location Constraints	34	39
Chapter Deficiencies	17	20
Solicitation	8	9
Total Cost of Membership	35	40
Meeting and Membership Composition	21	24

Note: Response frequencies are out of 87 and should not total to 100%.

5. DISCUSSION

The qualitative analysis has provided fruitful information concerning computing professionals' decisions for joining an association. Themes that persuade and deter membership were identified using a constant comparative method. The factors that influence professionals to join include personal growth, reputation, contribution, relationships, and career education. The factors that deter professionals from joining are time and location constraints, chapter deficiencies, solicitation, total cost of membership, and meeting and membership composition.

Descriptive analysis of the seven major categories of survey items indicated that networking opportunities has highest importance and member discounts has lowest importance for computing professionals. Analysis also indicated that computing professionals consider advocacy opportunities and leadership and community service opportunities as important services.

Further analysis of all survey items indicated specific factors that are important to computing professionals are: access to local meetings with relevant speakers, awareness of new technological developments, opportunities to promote the profession, opportunities to impact the profession, and receive career enhancing advices. Factors that are of least importance to computing professionals: opportunities to promote new products, access to special discounts on financial services, access to special discounts on group insurance plans, access to part-time/ internship

employment listings, and dissemination of conference call for papers.

Factors identified from the qualitative analysis and descriptive statistics analyses are not mutually exclusive and are strongly related. The persuasive factors can be linked to the categories that were considered important to members. For example, the highest rated theme, relationships, is represented by the items in networking opportunities, the top category of the survey in terms of importance. The theme of contribution and items about opportunities to promote and impact the profession are related, given that they are about making a difference to the profession at large. The theme of personal growth relates to leadership and community service opportunities, as both are about achieving personal ambitions and benefits. The career education theme and the importance of receiving career enhancing advice indicate that computing professionals consider career development as a key factor for being a member. Reputation, while more difficult to link to a particular service, still indicates that computing professionals consider image of the association an important factor.

From the deterrents, solicitation and the least important factors from the descriptive analysis are related as they are about receiving unwarranted information and services. Other deterrents from the qualitative analysis are linked to factors in terms of how the listed services are provided or executed. That is, members indicate that time and location of events, availability of local chapter, behavior and characteristics of peer members in the association, and cost of the membership are issues that may prevent them from participating in an association.

Comparison of findings from this study and that of Dalton and Dignam (2007) study reveals some interesting characteristics of computing professionals. In the present study, we focused only on current members; therefore, we compare findings for current members only. Both studies indentified that networking opportunities, dissemination of technical information and advancement in the field, professional development programs, and advocacy opportunities are persuading factors. Dalton and Dignam (2007) study indicated that certification programs are a deterrent; however, our study (certification and industry licensure was one of the 52 items) indicated it is neither an influential, nor deterring factor. In contrast to Dalton and Dignam (2007), our study indicates that for computing professionals total cost of membership is an important deciding factor.

Unique findings from our study indicate that computing professionals consider leadership and community service opportunities (i.e., personal growth) and reputation of the association as persuading factors. Our study also indicates that solicitation and unwarranted emails, timing and location constraints of events, lack of local chapter, and negative behaviors and characteristics of peer members in the association are deterrents for computing professionals.

Detailed recommendations for AITP based on survey findings can be accessed at (Ritzhaupt et al., 2008). Here, we highlight some important recommendations. Members were least interested in magazines and more interested in receiving latest developments in their profession; therefore, AITP should consider reshaping their dissemination services to provide members better access to relevant journals, conference proceedings, and white papers. Members were least interested in receiving insurance and financial discounts, however, there were some interest in receiving discounts for continuing education. Therefore, AITP should consider limiting their efforts towards providing non-professional discounts. AITP should consider supporting regional conferences to provide opportunities for its members to network, obtain hands on training, and opportunities for mentoring students. AITP should continue supporting local chapter presentation dinner meetings with relevant speakers to provide engaging and active learning environments. Further, local chapters should attempt to diversify its computing membership and should attempt to accommodate the complex schedules of its members.

An important caveat of the present study is the small sample size and focus only on AITP members. Therefore, results cannot be generalized to represent the entire population of computing professionals. In spite of above, our study has indentified many interesting findings. Comparison of findings from our study to the Dalton and Dignam (2007) study reveals both common and unique characteristics of computing professionals. Findings discussed in this paper are of utmost

importance for computing professionals and particularly for AITP as it may consider providing the crucial services indentified in this paper. A next step in this research is to conduct a similar study with other computing professional associations, in order to generalize findings to represent most computing professionals.

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Appendix A

TABLE 4. DEFINING EMERGENT THEMES THAT PERSUADE

Factor	Definition	Examples
Personal Growth	Personal gains that benefit the self including leadership opportunity, recognition, and career enhancement	"Leadership growth." "Looks good on my resume, especially board membership." "Personal satisfaction."
Reputation	Positive reputation of the association, the leadership, and the membership.	"Knowledge and reputation of national and local organization." "'Buzz' surrounding the organization." "Association public image."
Contribution	The organization and its members contribute or make a difference to the profession or to society.	"Legislative advocacy on the local, regional, and, particularly, the national level." "Acknowledgement for community service." "Support and promote the profession…"
Relationships	Networking, socializing, and talking with other people through face-to-face and remote formats.	"Having an opportunity to meet and work with other local IT professionals." "Personal relationships at the local and regional level." "Networking, friendship, sharing work experiences."
Career Education	Activities for continuing education, keeping current in the field, and developing skills relevant to the job.	"Education on new IT trends and technologies." "Accreditation, certification, licensing, and professional development." "…one of the most effective and inexpensive educations available…"

TABLE 6. DEFINING EMERGENT THEMES THAT DETER.

Factor	Definition	Examples
Time and Location Constraints	Limitations of time available, timing of events, and locations of events prevent participation.	"Meeting locations not convenient to the office or home." "Time commitments taking away from your main job and family." "Doesn't meet at a time I can attend."
Chapter Deficiencies	Lack of a local chapter or the chapter exhibits deficits in areas of membership, focus, scope, or events offered.	"Lack of a viable and functional local organization." "Poor quality programs." "Lack of local leaderships and growth."
Solicitation	Persistent requests for orders or other services from third parties.	"Too many vendor run events." "Bombardment with unwanted e-mails." "Solicitations from headhunting companies."
Total Cost of Membership	Amount required to participate or the perceived low return on investment.	"High costs of memberships and/or meetings." "Travel costs." "Sessions are not of value to me."
Meeting and Membership Composition	The makeup of the members and how they conduct themselves.	"Politics within the organization…not feeling welcome." "How the current members conduct themselves." "Age group is much older than I am which makes it hard to join and participate as a young professional."