Contents lists available at SciVerse ScienceDirect

Government Information Quarterly

Communities of Public Service Support
Citizens engage in social learning in peer-to-peer networks

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ARTICLE INFO

ABSTRACT

New Public Management and bureaucratic models fail to acknowledge the value of peer-to-peer cooperation between citizens as a resource for public service support. Social media enable citizens to create environments for sharing information about public services in Communities of Public Service Support. The success of this model for public service support depends on the availability of communities, the level of active participation, and the information content. This paper presents an empirical study of virtual communities of expats in The Netherlands. Our analysis shows that there is a wide variety of virtual expat communities with a high level of participation and valuable content. We conclude that virtual communities play an important role in public service support since they facilitate social learning between citizens.

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1. The promise of peer-to-peer cooperation

Providing public service support in communities of citizens provides a radically different perspective from the New Public Management doctrine and the traditional bureaucratic approach to public services. NPM typically sees citizens as consumers of public services (Barzelay, 2001; Pollitt & Bouckaert, 2000) while a traditional bureaucratic approach focuses on the legalistic and formal logic of the service provider (Bovaird, 2007). Both approaches have a common focus on the relation between government and citizens and do not consider the relations between citizens. A similar focus on the relation between government and individual citizens dominates the literature on e-government (West, 2005). In contrast, the basic idea behind peer-to-peer support is that citizens contact other citizens with questions regarding public services. This line of thinking is based on ideas about civil society as a sphere of support for citizens (Edwards, 2009). Citizens may be able to obtain useful answers that combine expert information with insightful experiences from others. This approach shifts our attention from interactions between citizens and government to peer-to-peer interactions between citizens in (virtual) communities.

Peer-to-peer cooperation is said to be the new paradigm for organizing in the information age (Lee & Cole, 2003; Raymond, 1999). Cooperation between dispersed individuals in projects such as Linux and Wikipedia has proven to be widely successful and communities of practice have become a dominant model for organizing collective processes of learning (Wenger, 1998). Various gurus have highlighted the potential of the internet for stimulating communities in the public

sector (Eggers, 2005). They argue that the success of platforms such as Wikipedia, YouTube, and Facebook could form a stimulus for new forms of peer-to-peer cooperation in the public sector. Public service support is mentioned as one of the government tasks that could be carried out in peer-to-peer networks (Leadbeater & Cottam, 2007).

Peer-to-peer networks are not new. Citizens have always contacted neighbors and friends for information about taxes, benefits, and entitlements. The interesting aspect of peer-to-peer support in an information age is that new technologies enable citizens to develop flexible, open, and targeted communities (Barnes & Shardlow, 1997; Eysenbach, Powell, Englesakis, Rizo, & Stern, 2004; Rheingold, 1993; Winzelberg, 1998). Virtual communities of citizens, therefore, may be an important supplement to formal forms of public service support. Typical for these new forms of public service support is that citizens can easily find people in the same situation for help or support. Many citizens do not have a friend or neighbor in need of the same public service but they will more easily find companions on the internet. In the realm of the World Wide Web people will certainly find other people with similar issues with, for example, their tax applications.

Providing public service support in communities has become popular in patient communities, hobby groups, and professional platforms (Ferguson, 1996; Ferguson & Frydman, 2004; Madara, 1997). People interact in these communities to exchange information and experiences and to engage in collective learning about music, illnesses, woodwork, traveling, computer programming, etc. In general, communities are groups of people who feel connected, interact, and share norms and rules for these interactions (cf. Van den Boomen, 2000, p. 43). Typical for virtual communities is that the individuals do not share a geographical space but, instead, share mental orientations. Shared identity plays a key role in communities (Castells, 1997; Van den Boomen, 2000). The internet extends the range of contacts, increases the flexibility and

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openness of communities, and facilitates the creation of a community knowledge base.

The idea of having virtual communities of citizens in which they answer each other's questions sounds promising but many barriers may prevent these communities from being successful. Do citizens really create these virtual communities to discuss public services or are they only interested in chatting? Do citizens have the knowledge to answer each other's questions or are many questions asked and few answered? Are questions specific for individuals and is the answer of another individual in another situation irrelevant? Whether a citizen-to-citizen approach in public service support actually works, depends on the availability of venues for citizens to ask for support from other citizens and on the quality of these venues. We have therefore formulated the following question: can citizens organize public service support in virtual communities?

We will explore actual citizen practices—in our case expats in The Netherlands—to evaluate whether virtual community service support can work in terms of providing information about public services to citizens. The case study should be regarded as a most likely case since expats are highly connected to the internet and much in need of information about public services. Our study tests whether public service support through virtual communities can work in a most likely situation and it aims to enhance our theoretical and empirical understanding of peer-to-peer public service support. Theories about communities of practice form an important contribution to work on citizen engagement and coproduction since most of that work focuses on the interactions between citizens and government, and not on interactions between citizens (Alford, 2009; Bovaird, 2007). We will present a perspective that conceptualizes peer-to-peer interactions between citizens as Communities of Public Service Support.

2. Communities of Public Service Support

The idea of Communities of Public Service Support builds upon broader notions of social learning in communities. Key to our present-day thinking about information exchange in communities is the work by Etienne Wenger (1998) on communities of practice. Wenger (1998, p. 3) criticizes an individual approach to learning and highlights the social aspects of learning. He places learning in the context of our lived experience of participation in the world and he puts an emphasis on learning as an informal process. The basic idea is that people interact in communities to reflect on experiences and enhance their understanding of the world and Wenger (1998, p. 4, 5) emphasizes that we all participate in various communities at work, at home, in our neighborhoods, in sports clubs, etc. This paper focuses our attention on a specific Community of Practice: a Community of Public Service Support. A Community of Public Service Support is defined as an informal community of citizens who engage in social learning about public services. These processes of social learning result in a better understanding of a specific part of the world: public services.

Wenger (1998, p. 5) highlights the social and constructive character of communities of practice. These communities concern much more than practices of information exchange in groups of people. Communities of practice help their participants to attribute meaning to their lives and the world and to develop shared identities. Patient groups, for example, do not only exchange information about the virtues of new treatments in virtual discussion groups but also develop a shared understanding of what it means to suffer from a certain disease. Kwon, Pardo, and Burke (2009) show how records managers use communities of practice to engage in collective learning on digital preservation. The exchange of information in Communities of Public Service Support therefore needs to be understood within a broader conception of social learning.

How can we conceptualize a Community of Public Service Support? Using the general conceptualization of Wenger, White, and Smith (2009) three components of Communities of Public Service Support can be defined:

1. *Domain.* Citizens share an interest in a specific domain of public services. They may be interested in information about specific services such as unemployment benefits of student grants, or alternatively, they may share an interest in the whole of public services for a certain target group such as elderly citizens.
2. *Practice.* Citizens develop shared resources, frameworks, and perspectives to facilitate exchange of information about public services. Citizen groups develop rules of interaction and they may also develop a common knowledge base with information about public services.
3. *Community.* Citizens develop social configurations in which their enterprises are defined as worth pursuing and their participation is recognizable as competence. Communities of Public Service Support develop a shared account of the engagement between citizens in this community and what the engagement is to achieve.

These three components are highly intertwined: practices are related to domains and shared in communities to facilitate social learning. From an evaluative point of view, the issues are whether these communities actually exist and whether they produce relevant information for their participants. The production of information depends on the composition of the community and the quality of the interactions within the community.

Do Communities of Public Service Support exist in a given domain of public services? Wenger (1998, p. 49) highlights that a community exists when participants engage in a mutual enterprise and develop a shared repertoire of doing things. The existence of the communities of practice depends on (distributed) leadership for building and maintaining a community (cf. Wenger et al., 2009, p. 10). A community can be created specifically for social learning on a certain domain of public services or social learning can take place in more general communities. Communities of unemployed are an example of the first type of community whereas an example of the latter is social learning about taxes within the context of an existing community of members of a trade union.

The composition of the community needs to be supportive to social learning about public services. Wenger (1998, p. 55) refers to participation in terms of membership of social communities and active involvement in social enterprises. Why do citizens participate in Communities of Public Service Support? Useful insights in citizen motives can be obtained from theories on coproduction in the public sector. Alford (1998, 2009) presents an overview of reasons why citizens want to be involved in the public sector. He indicates that voluntarism is the "animating spirit" of citizen involvement and its distinguishing characteristic. He stresses that citizens may be moved by either extrinsic rewards, such as pleasure or pay, or intrinsic rewards such as finding an activity worthwhile or self-fulfilling. Alford (2009, p. 27) stresses the importance of sociality or solidarity incentives, which he describes as "the enjoyment we derive from associating with others, from receiving their approval and concomitantly from not being subject to their disapproval." This confirms that a sense of "shared faith" is at the heart of peer-to-peer public service support.

Following the idea that social learning needs to be based on diversity (Wenger, 1998, p. 75), the success of Communities of Public Service Support depends on the number of participants and the composition of the community. The number of participants seems to be important for producing a variety in experiences and perspectives. A small community will be based on a limited set of experiences and, therefore, may suffer from a lack of information. A large community does not by definition mean that the community is diverse: it also has to have a diverse composition of participants. Participants may assume different roles in communities of practice and these communities will exhibit a

certain degree of heterogeneity. Some participants may take a more peripheral position whereas others may have a central position (Wenger, 1998, p. 168). A variety in roles may prove to be beneficial to the diversity of the community.

A challenge for diverse Communities of Public Service Support is to produce good interactions between the participants. The quality of interactions can be evaluated in terms of the satisfaction of participants and, in effect, a high level of participation forms an indication of fruitful interactions. More specifically, interactions can be evaluated in terms of the information about public services that is being produced in these communities and the number of participants that make use of this information. Relevant information is produced when the community generates a high number of questions and when these questions are answered by other participants. The value is further increased when other participants in the community also use the answers to these questions.

The idea of a COPSS is summarized in Fig. 1.

Fig. 1 shows how individual citizens interact with public service providers to obtain public services. Traditional approaches to public service support focus on this nexus: they ignore that these citizens interact with other citizens in COPSSs for social learning about public services. They retrieve information from this community and also provide information. The composition of a COPSS and the quality of interactions are crucial to the success of a COPSS.

In this section, Wenger's (1998) work on communities of practice has been used to conceptualize Communities of Public Service Support (COPSS). We have seen that a COPSS can be defined as an informal community of citizens who engage in social learning about public services. Citizen may resort to a Community of Public Service Support if such a community exists for a certain domain of public service, if it has a productive composition of participants, and if the quality of interactions produces valuable information. Gurus such as Leadbeater and Cottam (2007) highlight that new technologies will strengthen Communities of Public Service Support and enhance their value for citizens. In the next section, we will discuss the relation between technology and Communities of Public Service Support.

3. Virtual communities

Since Rheingold's (1993) seminal work on internet communities, a research tradition focusing on these communities has developed (for an overview: Cavanagh, 2007). The publications in this tradition focus on a variety of key sociological issues such as norms, interaction patterns, and power structures in virtual communities. Following up on his earlier work, Etienne Wenger has explored the value of these virtual communities for Communities of Practice (Wenger et al., 2009). These authors highlight the potential new technologies hold for facilitating cooperation in communities and they position the new technologies in a tradition of virtual communities that started in the 1970s with the first systems that were explicitly designed to support online work (Wenger et al., 2009, p. 15). They discuss the relation between technology and communities

Fig. 1. Communities of Public Service Support: social learning about public services.

as a "productive intertwining" (Wenger et al., 2009, p. 19): technologies are being developed in communities such as Linux and new technologies facilitate communities. Technology has changed how people think about communities and communities have changed their use of technology. Wenger et al. (2009, p. 20) emphasize that technologies and communities have a "shared DNA" since they exhibit several common patterns such as a balance between independence and interdependence an emphasis on horizontal relationships and dynamic boundaries.

Three characteristics of digital technologies seem to be crucial to facilitating interactions and learning in communities of practice (Antoniadis, Courcoubetis, & Mason, 2004; Meijer, 2008; Sproull & Kiesler, 1991). The first feature of these new technologies is that they facilitate one-to-many communications. Participants in these communities can send a message and a large group of other participants can easily read the message. Several one-to-many communications can take place at the same time within the community. The second feature is the asynchronicity of communications. Participants do not have to be at the same time and the same place to engage in communication. One participant can pose a question late at night and another participant can answer this question the following morning. This feature eases time constraints on communication. The third feature is the record-making character of the communication: all information is stored and readily available over time. This enables the virtual community to build a knowledge base about public service support.

How do these features contribute to COPSS? Digital technologies facilitate the creation and maintenance of a community. Individuals and groups can easily use off-the-shelf technology to start and manage a virtual community where questions related to public service support can be dealt with. A COPSS can be a new community or it can build upon a pre-existing (real life) community. Little technological knowledge is needed and no financial resources. The ease of creating a community explains the high number of existing communities on the internet (Smith & Kollock, 1999; Van den Boomen, 2000; Wellman, Noase, & Chen, 2002). However, a stunningly high number of these communities have no or hardly any members. A COPSS will only contribute to public service support if a large and varied group of citizens participates in the community.

Can we expect large numbers of members of virtual communities? The new technologies make it easy to create communities that can be joined anywhere and anytime and the costs of participation in terms of traveling and time allocation are limited compared to offline communities. However, opportunities will only result in active participation if there is a need for information and social learning. Blanchard and Horan (1998) highlight that active engagement will increase when virtual communities develop around physically based communities and when these communities foster common interests. The community needs to fulfill a need and it needs to produce valuable content for people to be willing to engage. A large membership only results in public service support if these members actually produce valuable content.

Producing content in virtual communities is easy: technology enables participants to formulate questions and label and position these in a structured manner. Other participants can easily access relevant questions and provide answers. Are participants capable of producing high quality answers? Experiences in patients, hobby, and professionals groups indicate that peers are indeed capable of providing answers to each other's questions (Ferguson, 1996; Ferguson & Frydman, 2004; Madara, 1997). These answers are often based on their own experiences. There is no a priori reason why public service support would be different from these other domains and hence we can expect participants to be capable of providing valuable content.

On the basis of our review of the literature we will now formulate expectations about Communities of Public Service Support in terms of the creation and maintenance of a COPSS, the level of participation and the information content that is produced in these communities. COPSS are assumed to be valuable when they exist, have active
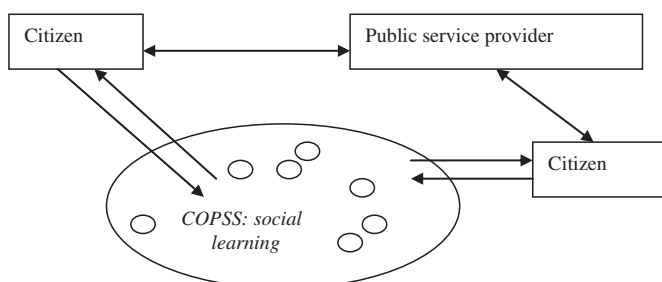
Table 1
Framework for analysis of the level of participation.

Item	Explanation	Indicators
1. Membership of COPSS	How many people are registered as members of the COPSS?	• Official membership listing
2. Participants and posting	What are the characteristics of the participants in terms of posting?	• Duration active • Number of posts per participant • Posts by moderators
3. Participants and information use	How many people use the information?	• Number of views per topic • View/post ratio

members, and produce valuable content. Whether COPSS can provide valuable public service support is tested through the following expectations:

1. *There is a large variety of virtual Communities of Public Service Support.*
2. *Some of these virtual COPSS have a high level of participation.*
3. *Some virtual COPSS produce relevant information about public services.*

Empirical research is needed to test these expectations. To this end, we identified one specific target group for service delivery, expats, and investigated the availability of communities, the level of participation, and the quality of content concerning public service support.

4. Research design

To our knowledge, no empirical research into public support through virtual communities has been conducted yet. We have selected a most likely case to explore whether this form of support can have any value for citizens and government. The empirical research focused on virtual communities of expats in The Netherlands. Expats are defined as persons, or partners of these persons, who do not have the nationality but work in the country for the mid-long term. Expats can be considered a most likely case for public service support in virtual communities since they have many needs in common such as getting a residential permit, finding a school, getting a tax exemption, etc. Furthermore, as a group expats are highly connected to the internet since they consist of entrepreneurial and highly educated individuals. They share an interest in certain domains of public services since they require much information about taxes, healthcare, residential permits, etc. before their departure to the host country and during their stay in it. The lack of knowledge about the institutions and rules of the host country makes them eager for information.

We contend that the generalizability of the results of our study is not limited to The Netherlands. One could even argue the opposite: the expats may have all nationalities except for the Dutch nationality. The case is a most likely case and the results cannot be generalized to practices where there is a less developed sense of "shared faith" and less e-readiness. The aim of this study is to test whether a COPSS can work. Further research is needed to obtain knowledge about the required conditions for a COPSS to function properly.

We have analyzed public service support in virtual communities of expats through a combination of methods:

• *Investigating the number of communities.* We have done a broad analysis of types of virtual communities of expats in The Netherlands. The following question guided this research: do these initiatives offer public service support and are these forms of public service support predominantly internet based?
• *Investigating the level of participation.* Our in-depth analysis of the selected virtual communities also explored the participants in these communities. The following question is answered in the analysis: what role do active and less active members play in the communities and what is the role of moderation?

• *Investigating the information content.* We have conducted an in-depth analysis of selected virtual communities to explore to what extent these communities provide public service support (Table 2). The following question is answered in this analysis: what is the relevance, frequency and quality of these forms of digital public service support?

The analysis of the availability of communities that provide public service support was carried out in October and November 2008. We selected relevant forums through a combination of methods: a Google search; following up on the links mentioned on websites; searches on international networking sites such as Facebook, Yahoo! Groups, and Meetup.com; and interviews with key informers. The selection of websites was ended when these methods did not lead to new findings. A practical limitation of the search was that we had to restrict the research to languages that one of the researchers on the team spoke (English, French, German, and Spanish). Websites in other languages (e.g. Italian, Polish, Russian, Japanese, Chinese) were excluded from the research, which does not seem problematic since the number of expats from these countries in The Netherlands is limited.

Websites were regarded as potential Communities of Public Service Support when they were primarily directed at expats, and specifically or partly directed at expats in The Netherlands. This broad search resulted in the selection of a number of 139 websites for further analysis. The websites were analyzed for general characteristics (geographical level, main target group (one nationality or expats in general)), language, main function (social or public service support), organizer (commercial or non-profit), organization of content (type of technology, moderator), indication of user value and link to offline contacts.

The analysis of the participation and content of public service support in virtual communities consisted of the in-depth investigation of three initiatives. The initiatives were selected on the basis of the criteria importance (number of posts and number of visitors) and language. The three most important initiatives in three languages were selected: Expatica (www.expatica.com, English), Le Forum des Holandais (www.leforum.nl, French) and Holeanda (www.holeanda.com, Spanish).

To analyze the participation we first looked at overall membership of these three communities. The in-depth analysis of the participation within the COPSS focused on distinctions between users in terms of number of posts and duration of their activity. We also analyzed the level of use of this information by other members of these groups. Our framework for the analysis of participation is presented above (Table 1).

To analyze the information content of the interactions we needed to focus on specific discussions since the number of discussions within the three initiatives is enormous. We selected the themes that are most relevant in terms of public service support to expats in The Netherlands: housing, education, employment, social issues, taxes and financial affairs, healthcare, legal affairs, and permits. In these subforums, the number of topics is high: we selected the first ten topics. Within these topics we analyzed all posts except so-called thank you posts. The latter were omitted from the analysis because this type of post would bias results. The selected posts were analyzed systematically in terms of information content. We focused on relevance, response and quality (see Table 2).

The items under *quality* were first checked on intercoder reliability: "Intercoder reliability is the widely used term for the extent to which independent coders evaluate a characteristic of a message or artifact and reach the same conclusion" (Lombard, Snyder-Duch, & Bracken, 2002). Intercoder reliability in this study was calculated using the following procedure. First, a pilot study was carried out by two coders (one of the authors and an assistant) to assess the posts of ten topics. Both coders received the same instruction about how to code added value, length, and external links on a scale ranging from 0 through 2. The results were checked on percentage agreement: added value 74.2%, length 87.1%, and external link 71%. After the first

Table 2
Framework for analysis of information content.

Item	Explanation	Indicators
1. Relevance	Are questions relevant in terms of public service support? This item assesses whether a post builds on the initial question in a topic or not.	0. No 1. Yes
2. Response	How many of these questions are answered? We have looked at the number of questions that have been answered, the average number of reactions to a question, and the number of participants that gets involved in answering the question (only for the first ten posts).	• Percentage of topics with a response if a response was required in that topic.
3. Quality	What is the quality of questions and answers? We have looked at three proxies to assess the quality of the answers: added value, length[a] of the post and link to external URL, address or phone number.	• *Added value:* 0. None: No new information compared to previous posts 1. Some: build on previous posts, partly new information 2. Yes: Provides completely new information/perspective on topic. • *Length:* 0. <150 characters 1. 150–300 2. >300 • *External information* 0. No or incorrect URL, phone number or address 1. Not necessary 2. URL etc. provided

[a] A study by Lampe and Resnick (2004) also links the length of a post in an online discussion to the (user assessed) quality of a post. For example, their results show that very short comments (<65 characters) are judged to be of lower quality than longer comments.

pilot test, the coder clarified differences and re-tested the indicators on a new topic. The results were in full agreement this time. The full assessment of all topics was divided among the two coders and resulted in an analysis of a total of exactly 500 posts.

5. Virtual expat communities in The Netherlands

5.1. Number of communities

Our initial analysis revealed a broad range of 139 expat initiatives on the internet, but do these initiatives offer public service support? We found that 72% of the websites predominantly have a social function in the sense that they provide opportunities to meet other expats. These are mostly online social communities such as the American Women's Club of Amsterdam. This club is a non-profit, volunteer organization for "providing friendship and support among American women, as well as non-American women with close ties to the United States, who are living in The Netherlands." The website states that this club facilitates these women's efforts to integrate into the Dutch community (www.awca.nl/amsterdam/, last accessed March 4, 2010).

Although more than half of the expat initiatives have a predominantly social function, a substantial number of sites provide a serious exchange of information. Twenty-one percent of the websites is actually used for public service support. They are used to exchange information about taxes, permits, housing, etc. The large online forum of Expatica, for example, promises to provide "a tailored local news service and essential information on living in, working in or moving to your country of choice" (www.expatica.com, March 4, 2010). This website clearly aims to provide information that expats need to live and work in a foreign country. How do I get a residential permit for my wife? Where do I find a good school for my children? Although they provide serious information, these communities also have a social function (chit-chatting about topics such as politics, social life, and the weather).

The next question is whether the public service support is only digital in nature or whether it is connected to offline contacts. We found that 34% of the initiatives are directly linked to (social) expat clubs. On the other end, we identified that 21% of the initiatives is not linked to offline contacts. Other initiatives such as Facebook groups are primarily online but may lead to offline contacts. Additionally, a substantial group of initiatives consists of information portals and not much offline contact can be expected here.

These findings show that a substantial minority of all expat websites offer opportunities for public support in virtual communities (21%, 29 initiatives). Expats can choose from a number of digital initiatives to obtain public service support from peers. The activities of the predominantly offline communities (real life communities, 34%) cannot be determined and are probably both social and directed and public service support. Thirty-eight percent of the online communities have a predominantly social function. The next question is whether the predominantly public online communities are worthwhile to participate in. Do these communities contain active members and lively discussions?

5.2. Level of participation

An indication of the level of activity within the virtual communities is the number of members. The total number of expats in The Netherlands is estimated at 300,000 (Statistics Netherlands [CBS], 2008) but the population is dynamic. Expats leave and enter the country continuously. How does membership of the virtual communities compare to these numbers?

Expatica has 80,000 members, Les Hollandais 6100 members, and Holeanda has 2400 members. The members of these three communities form nearly 30% of the CBS estimation of all expats in The Netherlands. Membership, however, is only a fraction of the number of expats that view the information. The literature suggests a ratio of 1 to 100 for "lurkers" (i.e. person who read discussions in a newsgroup but rarely or never participates actively, Nonnecke & Preece, 1999) to viewers (Carroll & Rosson, 1996). Although we have insufficient information to make a specific estimate, the numbers clearly suggest that a substantial number of the expats in The Netherlands use information from these forums.

How active are these participants? We first analyzed the number of posts per participant. The results are presented in Fig. 2.

Fig. 2 shows that most people (127 participants, 57%) only post once. They account for 25% of the total number of posts. On the other extreme is a small minority (5 participants, 2%) who has posted more than 10 times. This minority accounts for 20% of the total number of posts. This shows that there is a small active group but also a larger group of occasional posters. The virtual community has a mixed composition. The small, active minority is important because they mostly post answers to questions
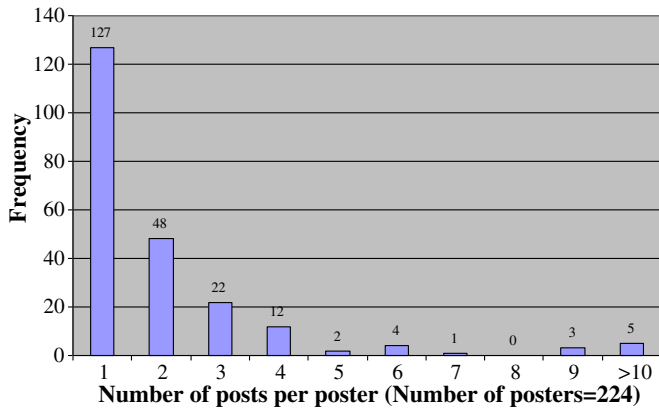
Fig. 2. Number of posts per participant (N = 224 participants).

Table 4
Percentage of posts per theme.

	Expatica	Les Hollandais	Holeanda	Total
Taxes and financial affairs	30.4	43.2	15.1	27.4
Housing	11.5	14.8	38.0	20.8
Employment	19.4	9.9	28.3	20.8
Legal affairs and permits	20.9	3.7	6.0	13.2
Healthcare	18.6	0.0	9.6	12.6
Social issues	7.9	25.9	3.0	9.2
Education	2.4	11.1	0.0	3.0
Total number of analyzed posts	253	81	166	500

Note: Posts can refer to more than one topic and therefore the number adds up to more than the total number of posts.

(98.4% of their posts) whereas the infrequent posters account for a relatively large amount of the questions: 25.9% of their posts are questions. This is confirmed when we analyze all first posts (i.e. questions). A total number of 98 questions were posed of which only two were posted by active forum users.

The mixed composition of these virtual community results in enough questions and reactions to these questions. An interesting aspect of virtual communities is that these questions are posed and answered in public. Other people can also use these answers, but how many people actually do that? We have seen that the number of posts per topic is around 15 and the number of participants around 5. The number of views is much higher: the average number of views is 1045 for Expatica, 1848 for Le Forum des Hollandais, and 772 for Holeanda. Some topics even had more than 10,000 views. The relevance of information and experience provided by peers is exemplified by these high numbers of views.

In sum, membership of the virtual expat communities is high and the number of expats that use the information is even much higher. The level of activity differs among the members. A small minority is highly active and they are important for providing reactions to posts whereas the larger, less active majority is crucial for posting new questions. The combination of roles provides for a diverse community.

5.3. Information content

These members may be active but do they also provide valuable information? We investigated the value of public service support for Expatica (80,000 members), Les Hollandais (6100 members) and Holeanda (2400 members). What is that content of the online public service support communities? Are the questions in these communities relevant in terms of public service support? We compared the number of posts that are related to public services to the number of other posts. The results are presented in Table 3.

The table shows that the total number of relevant posts is 16.1%. This reflects the number of relevant posts in the larger communities— Expatica and Les Hollandais—which have a number of relevant posts between 14.5% and 16.7%. The number of relevant posts in

the Spanish community Holeanda is much higher, 48.7%, which could be attributed to the tighter connections between the members in this smaller community This indicates that public service support is certainly not dominant but it does contain a substantial proportion of the number of posts in these communities. Furthermore, a much larger group of so-called lurkers potentially profits from the information found on forums (1068 view per topic on average).

What are these posts about? We specifically analyzed 500 posts for the various domains of public services. The results are presented in Table 4.

With a few exceptions, all themes are discussed in each virtual community. Most posts (21 to 27%) refer to taxes and financial affairs, housing, and employment; the fewest posts (3%) refer to education. An intermediate number of posts are found for legal affairs and permits, healthcare, and social issues (9 to 13%).

Our analysis indicates that the information exchanged in these virtual communities is indeed relevant for public service support. The questions cover the various domains of public services and are directly or indirectly related to them. Questions may refer to factual information, personal situations, and experiences of other expats (see Box 1).

Are these questions being answered? Our quantitative analysis showed that nearly all questions receive some kind of answer: 93.5% of the questions posed in Expatica, 100% in Le Forum des Hollandais, and 92.6% in Holeanda, leading to an overall average of 94.4%. Furthermore, the number of reactions per question is substantial: ranging from 13.9 to 15.6. This is an indicator of *tight connections* in the virtual community: the members actually react to each other's requests. An interesting finding is that the number of answers hardly varies between the larger virtual communities (Expatica and Le Forum des Hollandais) and the smaller one (Holeanda). This indicates that it is not the size of the virtual community that matters but the willingness of members to react to each other's posts.

Expats may be willing to react to each other's post but that in itself does not lead to valuable support. What is the quality of questions and answers? We have assessed the quality of the posts in terms of added value, length of the answer, and whether it contains a relevant link. We found that only 10.4% of the 500 posts did not provide any useful or new information that added to the central question in the thread. 38.2% had some value and 51.4% had a high value in terms

Table 3
Percentage of relevant posts.

	Relevant posts			Other posts			Percentage relevant posts
	Topics	Posts	Posts per topic	Topics	Posts	Posts per topic	
Expatica	9792	38,236	3.9	18,019	226,268	12.6	14.5%
Les Hollandais	4968	49,451	10.0	12,095	247,228	20.4	16.7%
Holeanda	406	3993	9.8	436	4204	9.6	48.7%
Total	15,166	91,680	6.0	30,555	477,700	15.6	16.1%

Note: The percentage of relevant posts is calculated by dividing the number of relevant posts by the sum of relevant and other posts.

Box 1
Examples of questions in virtual expat communities.

The following examples illustrate the content of the questions in the COPSS:

My question is, if I apply for the unemployment benefit, does this absolutely cancel any entitlement to the 30% ruling ever again? Even if I go away & work elsewhere & am then hired again?
(Expatica, 29 February 2009)
Does anybody know what a *werknemerspremie* is en how that can be translated (more or less) into Spanish or English? Is it the same as a *WW-premie*? And how is it related to the *ziektewet*?
(Holeanda, 8 April 2009, original post in Spanish, our translation and italics.)
We are having a problem… any one knows something about following…
I have a Dutch partner and a temporary permit for 5 years now based on partnership. Naturally my partner is my 'sponsor'… Which consequences there are in case he will lose his job?
(Expatica.com, 20 March 2009)

Box 2
Example of an answer in a virtual expat community.

The following (abbreviated) example concerns the answer to a question an expat posted about filling in a tax declaration:

You have to fill in the forms for 2008 tax return latest 30/04/2009. This is what I was told by tax authorities on the phone and later confirmed by letter. You have only 2 weeks left to go. First what you have to do is…. go to www.digid.nl and register yourself by clicking on "AANVRAGEN" on the left side on the page.
After that you will receive activation code by post. You have to go to www.digid.nl again and activate your account by clicking on "ACTIVATE".
By activating you account on www.digid.nl you will be able to fill in tax return forms through internet (the link is given below) simply using your User name and Password.
Then go Belastingdienst's web-site and fill in the form.
Here is the link http://www.belastingdienst.nl/particulier/…te_2008-05.html Download the program "Aangifteprogramma 2008 downloaden (Windows)" on your PC and follow instructions.
If you don't want to fill in the form through internet, then call to Belastingdienst and ask them to send you Aangifte 2008 formulier by post. But it take more time. […]
(Expatica, 9 maart 2009)

of providing completely new information or a new perspective on the topic. This means that the posts on forums really build on the initial question at the start of the topic. The second indicator (length) is considered to be a proxy for post quality. Prior research showed that short messages generally are of lower quality (Lampe & Resnick, 2004). Seventeen percent of the forum postings qualify as "short." Moreover, almost half of the posts (48.4%) are considered to be "extensive." Hence, participants generally take some time to type a message (not just one or two sentences), which generate added value for the poster of the initial question. The third indicator (external link) scored somewhat lower: only 17.4% of the answers provided an external link. On the other hand, most posts do not contain a reference to external sources or addresses in the form of a link. This may indicate that most questions cannot easily be answered on the basis of information that is available on another website; the expats indeed seem to need each other's knowledge. Box 2 presents an example of an answer to a specific question posted on an expat forum.

In sum, we found that a substantial proportion of the posts in the three virtual expat communities—approximately 16%—is related to some form of public service support. We also found that nearly all questions (94%) receive at least some kind of reaction and most questions receive many reactions. The average number of posts per topic is 15. The quality of these reactions is overall sufficient in terms of content and length while a hyperlink may not always be needed. The qualitative analysis showed that clear and comprehensive answers were provided to the questions. This leads us to conclude that expats can find valuable answers to their questions about public service in the virtual Communities of Public Service Support.

6. Building intelligent connections with citizen communities

Now that we have explored and analyzed the world of online expat communities, we can evaluate the value of public service support in virtual communities. We formulated three expectations regarding this value and we can now test these expectations on the basis of the research.

Expectation 1: There is a large variety of virtual Communities of Public Service Support

On the basis of a broad identification of expat initiatives we concluded that a substantial number of expat initiatives online (21%) can be labeled as online public service communities. There seem to be plenty of opportunities expats to obtain public service support from peers. These forms of support are provided in different languages (although predominantly in English).

Expectation 2: Some of these virtual COPSSs have a high level of participation

The research showed that the membership of the most popular virtual expat communities is high and the number of expats that use the information is even much higher. The level of activity differs among the members. A small minority is highly active and they are important for giving reactions to posts whereas the larger, less active majority is crucial for posting new questions. The combination of roles provides for a diverse community.

Expectation 3: Some virtual COPSSs produce relevant information about public services

We investigated the content and quality of the same three expat initiatives to assess to what extent these initiatives can provide public service support. This research led to the conclusion that a substantial proportion of the posts—approximately 16%—is related to some form of public service support. We also found that nearly all questions (94%) receive at least some kind of reaction and most questions receive many reactions. The average number of posts per topic is 15. The quality of these reactions might be labeled as "sufficient" in terms of added value, length, and presentation of a hyperlink. This leads us to conclude that expats can find valuable answers to their

questions about public service in the virtual Communities of Public Service Support.

We can now return to the question we formulated for our research: can citizens organize public service support in virtual communities? The research showed that in this most likely case citizens are able to organize public service support. Communities have been created, there is a high level of participation and participants create valuable content in these interactions. We expect that a COPSS can also function in other countries and other domains of public service when conditions such as a "shared faith" and high e-readiness are met.

Nonetheless, one should not get the impression that expats mainly use the internet to obtain factual information about public services. Social chatting is the dominant activity in online communities. First, only 21% of the initiatives can be labeled as some form of online public service support. The other initiatives are either only of a social nature or mainly focus on offline contacts. Second, in the expat initiatives that we labeled as offering some form of public service support, only approximately 16% of the posts are relevant in terms of public service support. Other posts consist of information that is not relevant to public service support. In sum, only a small proportion of all the online communication between expats provides online public service support. Nevertheless, since the total number and views of posts are high the added value of the analyzed posts is still substantial. The intertwining of public service support with other social functions fits perfectly in Wenger's (1998: 74) conceptualization of a community of practice. Wenger highlights that in organizations it may be just as important to know and understand the latest gossip as it is to know and understand the latest memo. Social learning in informal communities will never be limited to formal information.

The availability of the internet certainly plays a crucial role in the creation of these peer-to-peer networks. Setting up an organization used to be a rather complicated matter and finding people that would be interested in this type of peer-to-peer network is complicated without the use of new media. Offline organizations such as the American Women's Club of Amsterdam could exist without the internet but the larger forums such as Expatica, Les Hollandais, and Holeanda need the new media to be able to create open, flexible communities. Online communities may create "weak ties" in the sense that contact is limited to the exchange of information but these "weak ties" are of great importance for providing peer-to-peer public service support (cf. Granovetter, 1973). Wenger et al. (2009, p. 174) label these communities as "proto-communities" but these "proto-communities" may never result in tightly knit mature communities and retain their developmental character.

The common factor in all these virtual communities here seems to be that there is some sort of shared identity or "community of faith" (Anderson, 1991): citizens feel they share the same situation and therefore are willing to invest in each other's question. This indicates that public service support in virtual communities will work under the condition that clients of public services can form a "community of faith." This may be possible in groups of citizens that identify with public services such as students with student grants and jobless with unemployment benefits whereas the identification with child support and taxes can be expected to be more limited. However, one should not overlook the possibility that a "community of faith" may even develop in these policy domain since prior research has shown that a sense of community may also develop after a series of more instrumental contacts (de Koster, 2010).

How is the analysis of these initiatives relevant to public service providers? Firstly, these peer-to-peer networks provide informational support but they cannot provide the services. It is important for service providers to comprehend the support structure that influences the behavior of expats since service provision by government is connected with public service support by peer-to-peer networks. Secondly, the availability of peer-to-peer public service support can form a valuable addition to existing structures for support and even

offer the opportunity to reduce costs. Thirdly, these structures can also provide supplementary value in terms of making peer experiences available. Governments may choose to redirect expats to these virtual communities. In view of the quality of the answers, there does not seem to be a need to add information to these communities. A provider-centric approach to the production of public service support fails to acknowledge the powerful activities taking place in these citizen groups.

This paper has developed a rather instrumental perspective on Communities of Public Service Support. Wenger's (1998) theory is much richer and focuses our attention on complex processes of social learning. Now that we have established that important social learning takes place, further research can help to enhance our understanding of Communities of Public Service Support in terms of the meanings that participants attach to these processes of social learning and the kinds of identities that are being constructed in these communities. How do expats construct new meanings of the Dutch government in these virtual communities?

Our study has shown that expat communities generate information that is relevant for public service support and this content is generally of high quality. New Public Management approaches and bureaucratic models indeed neglect the value of this resource. Government can choose to ignore this domain of citizen activities or explore ways of connecting to these active communities. The production of information content is a key activity of government and in this information age this production should not only be structured along the lines of a producer-centric approach. This empirical study of virtual communities of expats showed that digital ties amongst citizens can actually work and provide a valuable addition to the traditional provider-centric approach of public service support.

Acknowledgments

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