

Diffusion of E-Government Innovations in the Dutch Public Sector: The Case of Digital Community Policing

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Abstract. This article examines the diffusion of an e-government innovation – called SMS-alert – among Dutch police forces. A conceptual framework for the diffusion of e-government innovations in the public sector is developed which combines a functional and a constructivist (or cultural) approach of diffusion. The framework focuses on diffusion as a mutual process of communication, learning and sense making. Based on this framework and by using data from documentation, websites and interviews, the process of diffusion and adoption of SMS-alert is reconstructed and the factors and mechanisms explaining this process are identified. The case study demonstrates that although SMS-alert has diffused rather rapidly until now, the diffusion process is currently facing some difficulties, mainly due to the existence of competing innovations. By demonstrating the importance of both the functional, political and institutional meaning of the innovation, the article confirms the value of combining different approaches in studying the diffusion of e-government innovations.

Keywords: e-government innovation, diffusion, sense making, goodness of fit.

1 Introduction

In July 2004 the police force of the Dutch region Midden- and West-Brabant introduced a new warning and communication system, called SMS-alert. By sending text messages to mobile telephones this e-government innovation enables a police force to improve its service delivery and to change its interactions and relationships with citizens in terms of community policing [12, p. 425]. A better, location based service is provided because citizens are informed or mobilized in an early stage, for instance, regarding a missing child or a burglar on the run in a specific area. Moreover, SMS-alert facilitates a new safety concept, in which the citizen is mobilized to act as a co-producer of public safety. By being the eyes and ears of the police in the neighbourhood, citizens become engaged in the attack and prevention of local crime.

Three years after its introduction by the police force of Midden- and West-Brabant, SMS-alert has spread to several other Dutch police forces. By now, nine out of a total of twenty-six police forces have adopted SMS-alert and at least seven other police forces have voiced their interest in the e-government innovation. This raises the following research question: How can the process of diffusion of SMS-alert among Dutch police forces be described and explained?

Over the years, the spreading of e-government innovations from one (governmental) unit to another has been studied rather extensively by the business studies diffusion and technology transfer literature [15, 16], and the social psychology theory of reasoned action [7] and technology acceptance model [3, 20]. Although this functionalist literature has demonstrated the importance of innovation and adopter characteristics for the diffusion of an innovation, it does not place diffusion in a broader perspective. It insufficiently acknowledges that the cultural environment of an organization, as a reservoir of meanings which influences the legitimacy of organizations, can strongly influence its adoption decision, especially in the public sector [11, 17, 18]. Therefore, in this article, the process of diffusion of SMS-alert among Dutch police forces is described and explained by combining a functional approach with a cultural c.q. constructivist approach of diffusion [13].

First, some concepts and theories that are relevant to the study of e-government innovation diffusion are discussed. Next, based on insights from these theories, a conceptual framework for the diffusion and adoption of e-government innovations in the public sector is presented. This framework combines a functional and a constructivist approach of diffusion. Based on this framework the diffusion and adoption process of SMS-alert is reconstructed and the factors and mechanisms explaining these processes are identified. Finally, some conclusions are presented.

2 Defining and Explaining Diffusion

This section defines the concepts central to this study and discusses some theories relevant to the description and explanation of diffusion processes of e-government innovations in the public sector.

2.1 Defining Diffusion and Adoption

Two concepts are central to this study. First, the diffusion of an innovation can be defined as “a process in which an innovation is communicated through certain channels over time among the members of a social system” [16, p. 5]. It is important to make a distinction between the diffusion and the dissemination of an innovation. Whereas diffusion refers to the informal and “uncontrolled” spread of an innovation, dissemination refers to formally and centrally driven spread [8, p. 191-192].

Second, the adoption of an innovation can be defined as “the [voluntary and/or coercive] process through which [an organization] passes from first knowledge of an innovation, to forming an attitude towards the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision” [16, p. 20]. Organizations can adopt an innovation in varying degrees, ranging from copying an innovation without making any changes, to using an innovation as an inspiration [5, p. 52-53].

2.2 Some Relevant Theories

Over the years, the spreading of e-government innovations from one (governmental) unit to another has been extensively studied. Three important bodies of theory that

contribute to this research are the business studies diffusion and technology transfer literature [15, 16], and the social psychology theory of reasoned action [7] and technology acceptance model [3, 20]. Whereas the diffusion and technology transfer literature explains the adoption of (e-government) innovations by both individuals and organizations while focusing on innovation and adopter characteristics, the other two models focus on the acceptance and use of ICT innovations by individuals while focusing on their attitude towards (the use of) an innovation. Despite these differences, these models have an important similarity: they only pay limited attention to the influence of the environment of an organization on its innovation adoption decision [13].

Pollitt [13] states that a distinction can be made between two theoretical approaches of innovation diffusion: a functional approach and a constructivist (or cultural) approach. According to the functionalist approach – which is dominant in the models discussed above – adoption decisions are (primarily) driven by functional imperatives of efficiency. An organization's adoption decision is primarily based on a "logic of consequence": the assumption that organizations make choices among alternatives by evaluating their consequences in terms of prior preferences [10, p. vii].

On the contrary, according to the constructivist (or cultural) approach, adoption decisions are not so much based on 'economical fitness', but on 'social fitness' or considerations of legitimacy, symbolism and fashion. An organization's adoption decision is primarily based on a "logic of appropriateness": organizations have identities and/or fulfil roles by recognizing situations and following rules which match appropriate behaviour to the situations they encounter [10, p. viii].

However, in order to fully understand diffusion processes in the public sector, it is important to combine the two approaches [11, 13, 19]. Whereas the functionalist approach demonstrates the importance of innovation and adopter characteristics, the constructivist or cultural approach puts adoption in a broader perspective and emphasizes reasons for adoption which are much more related to the environment. This environment is seen as a reservoir of different meanings, which are being shared – to some degree – by the organizations that are being a part of a specific policy sector [18]. From a cultural perspective, a policy sector refers to the existence of a community of organizations that partakes of common meaning systems and those participants interact more frequently and faithfully with one another than with actors outside the policy field [17, p. 56]. The way in which organizations embrace these meanings influences the way in which an organization is being perceived as legitimate. In the end, this also influences the adoption of innovations that are being viewed as the expression of specific patterns of meaning [11].

3 Towards a Conceptual Framework

Based on the insights from the theories discussed above, this section presents a conceptual framework for the diffusion and adoption of e-government innovations in the public sector that integrates a functionalist and a constructivist (or cultural) approach.

3.1 Goodness of Fit

At the heart of e-government innovation diffusion processes in the public sector lies the exchange of innovation information and experience among the organizations in a network [16, p. 233]. In this complex and non-linear process of communication and learning, organizations reduce uncertainty about an innovation. They create and share information about the innovation with one another in order to reach a (mutual) understanding about the (different) meanings of the innovation [16, p. 5]. In other words, this communication and learning process can be understood as an (iterative) process of sense-making, in which organizations express, test and re-frame their perceptions about an innovation in order to reduce the ambiguity and equivocality regarding the possible meanings of the innovation [21]. This process of sense making is focused on the creation of a match between an innovation and a potential adopter, a so-called “goodness of fit” [4, 11]. As indicated above, this fit can be understood both in terms of the “logic of consequence” and the “logic of appropriateness”. The following three types of meanings of the goodness of fit can be distinguished.

3.2 Functional Meaning

The functional meaning of an e-government innovation is (primarily) based on the logic of consequence and refers to the importance of the (perceived) characteristics of an innovation [3, 7, 16]. A distinction can be made between six – empirically interrelated but conceptually distinct – characteristics [16, p. 16-17]: relative advantage (degree to which an innovation is perceived as better than the idea it supersedes - in economic terms, but also in terms of social prestige), compatibility (degree to which an innovation is perceived as being consistent with existing values, norms, needs and past experiences), complexity (degree to which an innovation is perceived as difficult to understand and use), trialability (degree to which an innovation may be experimented with on a limited basis), observability (degree to which the results of an innovation are visible to others) and reinvention (degree to which an innovation can be changed or modified by a user in the process of adoption and implementation).

3.3 Political Meaning

The political meaning of an e-government innovation is (primarily) based on the logic of appropriateness and refers to the opportunity structure an innovation can provide. In the public sector, competing problem definitions, approaches and solutions (incremental and innovative ones) are constantly trying to get the attention of political and other stakeholders. For innovations to be adopted, (elements of) these streams of actors, problems and solutions have to be coupled. In other words, a so-called ‘window of opportunity’ has to be created. The opening of a window can be triggered by a change in one of the streams (e.g. a change in the perception of a problem or a possible solution), by a focusing event that draws attention to a problem (like elections or public pressure), or by so-called policy entrepreneurs or change agents that ‘soften-up’ policy communities to gain acceptability for an innovation [9].

3.4 Institutional Meaning

The institutional meaning of an e-government innovation is (primarily) based on the logic of appropriateness and refers to the notion of “isomorphism”. Isomorphism is “a constraining process, that forces one unit in a population to resemble other units that face the same set of environmental conditions” [4, p. 66]. As more and more organizations adopt an innovation – either through coercion or imitation – the innovation becomes a legitimate mode of operation. A distinction can be made between three types of isomorphism [4]. Coercive isomorphism refers to formal power (like legislation) and informal power (like peer group pressure), which is used to adopt specific changes. Mimetic isomorphism results when an organization copies an (often successful) example. Normative isomorphism occurs when an organization adopts an innovation because the professional and scientific community of which the organization is a member advocates the innovation.

4 Enablers and Barriers

Next, three categories of factors and mechanisms are discussed that can explain the diffusion and adoption – and the goodness of fit – of an e-government innovation.

4.1 Diffusion Policy

A first category of factors and mechanisms that explains the adoption of an e-government innovation refers to the diffusion policy. In the diffusion literature, this category is rather underexposed. However, inventors, (early) adopters and intermediary organizations – such as ministries, knowledge centres and commercial organizations – can play an important role in spreading an innovation. As Downe et al. [6, p. 551] state, “the transfer of knowledge and the creation of innovation depends on the capacity and expertise of both the recipient organization and the originating organization”.

The diffusion of an innovation is influenced by the degree to which the inventor, (early) adopters and/or intermediary organizations are willing (in terms of attitude) and able (in terms of resources) to share their knowledge and experience on the innovation. This willingness and ability to share knowledge and experience has to be translated into a diffusion- and codification strategy in which explicit dissemination activities are formulated [6, 14]. This strategy should be both focused on the codification of gained experiences and distribution of knowledge and experience – for example by making brochures, protocols and project plans available – and on the creation of a mutual process of communication and learning – for example by offering potential adopters the possibility to exchange information and experiences with adopters at a conference or by organizing site visits. The use of ambassadors – individuals or organizations that actively promote the adoption of an innovation – can also be part of a diffusion strategy.

Finally, the diffusion and adoption of an innovation is influenced by the attention the media pays to an innovation [9, 16], for example because an innovation has won an award.

4.2 Organizational Characteristics of Adopters

A second category of factors and mechanisms that explains the adoption of an e-government innovation refers to the structural and cultural characteristics of (potential) adopters [8, 16, 17]. First, the adoption of an innovation is influenced by the organizational size. For larger organizations it is relatively easier to mobilize resources – like time, people and money – for the adoption and implementation of an innovation.

Next, the adoption decision of an organization is influenced by its formal structure – e.g. its degree of centralization, functional differentiation and specialization – and its innovation preparedness, which refers to its receptivity to change, in which trial and error can take place. According to Burns & Stalker [2], organic organizations are more willing and able to adopt an innovation than mechanistic organizations, because the formal and rigid structure and culture of the latter hinder change and frustrate the possibility of trial and error.

Finally, the adoption of an innovation is influenced by the degree to which policy entrepreneurs [9] or champions [16] – charismatic individuals who throw their weight behind an innovation in order to overcome indifference or resistance that the new idea may evoke – are present in an organization and are able to create or open a policy window for the innovation.

4.3 Network Characteristics

A final category of factors and mechanisms that explains the spread of an e-government innovation refers to the network characteristics [8, 16, 17]. Network characteristics influence the exchange of knowledge and experience among the organizations participating in a network as well as the adoption decisions of these organizations.

The willingness and ability to exchange innovation information and experience among the members of a network is influenced by the quality – e.g. the degree of mutual trust or competition - and intensity of their relations. Moreover, this exchange of knowledge and experience is facilitated by geographical [1] and cultural proximity [16]. This geographical and cultural proximity also influences the adoption of an innovation. Organizations tend to copy innovations from their neighbours [1] and from organizations that share the same frame of reference [16]. However, a shared frame of reference or ideology can also hinder the adoption of an innovation, since cultural closeness can lead to the reproduction of the existing ‘modus operandi’ [16, 17].

Finally, the degree of interdependency between organizations can serve as an incentive to adopt an innovation, because interdependency can make an organization feel “forced” to adopt an innovation [4].

5 Research Strategy

In order to gain insight in the diffusion process of SMS-alert among Dutch police forces, an in-depth case study was conducted. By using this case study strategy, the holistic and meaningful characteristics of the case could be retained and patterns of meanings, based on the interactions among relevant actors, could be reconstructed [22].

The selection of the case was based on two criteria. First, as argued above, following the logic of appropriateness, the adoption of e-government innovations by public sector organizations is strongly influenced by (developments in) their environment [11]. Therefore, a case was selected from a policy sector that is currently highly politicized: safety. Hence, we expect that not only the logic of consequence but also the logic of appropriateness would play a role in the decision to adopt an innovation. Second, mainly due to extensive media attention, SMS-alert is an innovation that is rather widely known in the Netherlands. Also, the system has won one innovation award and was nominated for a second award. This raised the question whether this familiarity with (the success of) SMS-alert had led to the wide adoption of the innovation.

The qualitative data for the case study are triangulated [22] and come from the study of relevant policy documentation, websites and in-depth interviews. Using a semi-structured schedule, ten different stakeholders were interviewed, working at different police forces and at different levels. First, the policeman who invented SMS-alert, the project manager of Midden- and West-Brabant who was set the task to spread SMS-alert, and his contact at the technology supplier of SMS-alert. Next, the project managers of four police forces that adopted SMS-alert, one police force that initially decided to reject the innovation (active rejecter) but eventually did adopt SMS-alert, and two police forces that not (yet) really considered the use of SMS-alert (passive rejecters or non-adopters) [16, p. 178]. Although the importance of adoption of SMS-alert by individual officials is acknowledged, this research focused on the organizational adoption decision of police forces.

The data are collected from March 2006 until March 2007. Based on these data, the diffusion and adoption process of SMS-alert among Dutch police forces was reconstructed and the factors and mechanisms explaining these processes were identified.

6 Findings

This section presents the findings from the case study. By discussing the diffusion policy, the different meanings of the innovation, the organizational characteristics of adopters and the network characteristics, the factors and mechanisms that explain the process of diffusion and adoption of SMS-alert are identified.

6.1 Diffusion Policy

A first category of factors and mechanisms that explains the diffusion process of SMS-alert concerns the diffusion policy. This category refers to the attitude and resources of inventors, (early) adopters and intermediary organizations towards knowledge sharing and its translation into a diffusion- and codification strategy.

First, the police force of Midden- and West-Brabant – was very willing and able to share its knowledge about SMS-alert. After the invention of the system by a policeman, in November 2005 a project manager (ambassador) was appointed who was explicitly set the task to diffuse SMS-alert to other police forces. This project manager developed – partially by means of grants of the Ministry of Internal Affairs

and the province of Noord-Brabant – an active diffusion strategy. This strategy was not only focused on the distribution of (codified) knowledge and experience by making the project plan, a brochure, protocols and an instruction movie available. By giving presentations to interested police forces and offering advice on the start of a pilot, the project manager also created a mutual process of communication and learning. For example, one of the police forces that initially rejected the innovation because it had recently developed its own system eventually decided to adopt SMS-alert, because the project manager had shown how to combine the two innovations.

However, in September 2006 both the project manager and the diffusion of SMS-alert were transferred to VTS Netherlands, an organization which is set the task to uniform the information systems of Dutch police forces. Although VTS Netherlands is interested in SMS-alert, due to limited resources, the organization has not prioritized the encouragement of the nationwide introduction of SMS-alert. Therefore, at this moment, the project manager is advocating the diffusion of SMS-alert on his own initiative (in his leisure time), for example by introducing a (structural) national SMS-alert meeting.

Technology suppliers often play an important role in the diffusion of technology driven innovations like SMS-alert, because they have a commercial interest in spreading the innovation. However, in this case, the role of technology supplier Emexus in spreading SMS-alert was very limited, due to strict agreements with the police force of Midden- and West-Brabant.

Finally, the extensive (local, regional, national and international) media attention for SMS-alert made the innovation widely known and stimulated its diffusion. This media attention was generated by the fact that SMS-alert successfully contributed to public safety. Also, SMS-alert won one innovation award, and was nominated for a second award.

6.2 Functional Meaning

The functional meaning of an innovation is based on the logic of consequence and refers to the influence of the (perceived) characteristics of an innovation on its adoption. First, the *relative advantage* of SMS-alert strongly influenced its adoption. The adopters of SMS-alert state that the evaluation of the pilot in Midden- and West-Brabant clearly showed the (perceived) advantages of the innovation for both the police force and its citizens. For example, several missing children and a stolen scooter had been found thanks to SMS-alert. As discussed above, these successes were also made *visible* by the project manager and by the media. Moreover, these advantages were combined with (relatively) low initial expense and (relatively) low *costs* for using the system.

However, the relative advantage of the innovation also influenced the decisions of the (passive) rejecters. Several police forces are participating in the pilot of an innovation highly comparable to SMS-alert, called Burgernet. Other police forces are themselves currently developing a system comparable to SMS-alert. As a result, for these police forces, at this moment, the advantages of SMS-alert are not high enough. In other words, the diffusion of SMS-alert was hindered by the competition with innovations – especially Burgernet - that are comparable to SMS-alert, also in terms of their advantages.

Second, the adoption of the innovation was not handicapped by its *complexity* or its *compatibility*. Because its introduction requires adapting existing systems and rethinking the distribution of responsibilities among officials, the adoption of SMS-alert can be regarded as rather complex. However, especially for late(r) adopters, this complexity was reduced by the diffusion strategy of the inventor that made (codified) knowledge and experience on the introduction and use of SMS-alert available to (potential) adopters. As a result, for late(r) adopters it was quite clear what kind of organizational changes had to be taken into account.

Third, this case shows the importance of *trialability* of an innovation. It demonstrates that test results reduce uncertainty about (advantages of) an innovation. Many police forces – especially the smaller ones – waited for the results of the pilot in Midden- and West-Brabant before they decided on adopting SMS-alert. Moreover, the adopters also wanted to test the system themselves, before introducing it in every district of their police forces. Therefore, almost every adopter introduced SMS-alert in phases (per district). Finally, the importance of test results is demonstrated by the fact that several police forces decided to adopt SMS-alert instead of Burgernet, because SMS-alert, as opposed to Burgernet, is a proven technology.

Finally, the degree to which SMS-alert can be modified to the specific needs and characteristics of individual police forces did not handicap its adoption. Because police forces are free to decide which functions they ascribe to SMS-alert, several examples of *reinvention* can be found in this case. However, this possibility for reinvention is limited by the fact that every adopter has to sign a contract with the police force of Midden- and West-Brabant in which agreements are made about product changes and the acknowledgement of intellectual property.

6.3 Political Meaning

The political meaning of an innovation is based on the logic of appropriateness and refers to the opportunity structure an innovation can provide. In this case, the political meaning of the innovation was very important. On the one hand, due to a number of political and societal developments, a *policy window* was created for SMS-alert at many police forces, which generated support and finances for the innovation. The improvement of safety and citizen satisfaction – as indicated by the Cabinets program “Towards a safer society” and the report “Active reciprocity” of the Ministry of Internal Affairs – are goals that are high on the political and societal agenda. For Dutch police forces, these ambitions are reflected in the realization of the so-called “National Plan Dutch Police 2003-2006” and the “Regional Covenants Police”. In these plans performance agreements are laid down between the police forces and the Ministers of Internal Affairs and Justice. By adopting SMS-alert, police forces could show that they contributed to the goals of improving safety and citizen satisfaction and increase their performance and legitimacy.

On the other hand, the policy window for SMS-alert was limited, because the system had to compete for support and resources with highly comparable innovations, primarily Burgernet. Several police forces did not adopt SMS-alert (yet), because they participated in a Burgernet pilot. Other police forces decided to wait for the test

results of this Burgernet pilot before investing their (limited) resources. At the national level, SMS-alert also had to compete with Burgernet for support and resources. Recently, in its coalition agreement, the Cabinet announced the nationwide introduction of Burgernet. Moreover, the Board of Commissioners is advocating the integration of SMS-alert and Burgernet by considering SMS-alert as the text message application of Burgernet.

At some police forces, *policy entrepreneurs* facilitated the opening of a policy window for SMS-alert. An example of these policy entrepreneurs is the so-called innovation brokers of one of the police forces. These innovation brokers are explicitly set the task to identify interesting ideas and innovations – such as SMS-alert – inside and outside their own police force. By identifying these innovations and advocating them at their own police force they created a policy window for these innovations. Also, at the implementation of SMS-alert, many project managers served as entrepreneurs, because they educated their officials in using the innovation.

6.4 Institutional Meaning

The institutional meaning of an innovation is based on the logic of appropriateness and refers to the notion of isomorphism. For the diffusion of SMS-alert, *mimetic isomorphism* has been very important. As indicated, the evaluation of the pilot in Midden- and West-Brabant showed the (perceived) advantages of the innovation. Stimulated by the political and societal developments described above, other police forces wanted to mimic this success. Moreover, this mimicking was facilitated by the availability of (codified) knowledge and experience about the innovation.

Next, this mimetic isomorphism was stimulated by some coercive and normative isomorphism. *Coercive isomorphism* resulted from the fact that the Ministry of Internal Affairs – linked to a subsidy for the development of SMS-alert by the police force of Midden- and West-Brabant – insisted on regarding SMS-alert as a national example. Hence, soft political pressure was generated which should stimulate police forces to adopt SMS-alert. Also, SMS-alert won one innovation award and was nominated for a second award. Some *normative isomorphism* resulted from the large number of professional networks in which experiences with SMS-alert were discussed and relevant knowledge was exchanged.

As demonstrated, at this moment, coercive and normative isomorphism seem to play a minor role in the diffusion of SMS-alert in comparison to the instrumental and political meaning of SMS-alert. Although the compulsory legitimacy of SMS-alert is growing, police forces still feel free to make their own decision with regard to the adoption of SMS-alert. For now, due to political pressure, coercive isomorphism especially seems to hold for the adoption of Burgernet. However, SMS-alert is still a relatively new innovation and its diffusion process is not crystallized. Several police forces have not yet decided about the adoption (or rejection) of SMS-alert. Consequently, the importance of coercive and normative isomorphism – and of the institutional meaning of SMS-alert – may change over time, while its effects will become more dominant when Burgernet and the insertion of SMS-Alert as a part of Burgernet, will be nationwide implemented.

6.5 Organizational Characteristics of Adopters

The adoption of an innovation is also influenced by the organizational characteristics of (potential) adopters, such as their size, formal structure and innovation preparedness. First, the *size* of the police forces influenced the ability to free time, people and finances for the adoption and implementation of SMS-alert. Many early adopters are larger police forces for who it was (relatively) easy to free the resources necessary for a pilot. However, several smaller police forces are still trying to arrange the resources – especially time and people – that are required for the adoption and implementation of SMS-alert. Other (often smaller) police forces decided to await the developments concerning the nationwide introduction of Burgernet before investing their (limited) resources. Finally, at several police forces the adoption (and implementation) of SMS-alert was endangered by the high turnover of project managers, sometimes because being a project manager only was a temporary job.

Secondly, the *formal structure* refers to the layered construction of police forces. Many officials are involved in the adoption – and especially the implementation – of SMS-alert. In order to make full use of the system, these different officials have to be willing and able to use it. Therefore, an important role was given to the SMS-alert project managers in educating their officials.

Finally, the *innovation preparedness* of the police forces influenced their adoption decisions. Although examples of (institutionalized) innovation can be found at Dutch police forces – such as the innovation brokers discussed above or the innovation workgroups and departments that are part of many police forces – innovation is not entirely anchored, especially at the national level. Recently, the (unofficial) Board Research and Innovation stated that the national Board of Chief Commissioners has no clear vision on how to deal with innovations. Moreover, both the board and individual police forces argue for a more structural and less fragmented exchange of innovative ideas among as well as inside police forces.

6.6 Network Characteristics

A final category of factors and mechanisms that influences the diffusion and adoption of innovations refers to the network characteristics. On the one hand, the network in which SMS-alert diffuses can be characterized as *well organized*. Different types of officials regularly meet – both formally and informally. Sometimes these meetings are linked to *geographical proximity*. On the other hand, as stated above, the exchange of innovative ideas among police forces is often fragmented. In the case of SMS-alert, knowledge and experience are rather structurally exchanged among adopters. Next to many informal meetings, the project managers meet at the recently introduced national SMS-alert meeting. Also, some project managers exchange knowledge and experience with project managers of comparable innovations, like Burgernet. However, the exchange of information with police forces that have not (yet) adopted SMS-alert is limited to informal meetings and more general meetings, like the Board of Chief Commissioners.

Moreover, the exchange of knowledge and experience about SMS-alert among police forces is facilitated by their cultural proximity. Partly due to political and societal

developments, police forces share the same frame of reference: they want to improve their performance and legitimacy by improving safety and citizen involvement.

Finally, by intensively exchanging knowledge and experience, police forces can try to influence each other's adoption decisions. However, because police forces operate rather *independently*, they cannot determine each other's adoption decisions.

7 Goodness of Fit

This article examined the diffusion and adoption of an e-government innovation – called SMS-alert – among Dutch police forces. Based on both a functional and a constructivist (or cultural) approach, a conceptual framework for the diffusion and adoption of e-government innovations in the public sector was developed. By using data from documentation, websites and interviews, the process of diffusion and adoption of SMS-alert was reconstructed and the factors and mechanisms explaining this process were identified. This final section presents the conclusions about the realization of the “goodness of fit” in this case and the factors and mechanisms contributing to this.

At this moment, SMS-alert can be regarded as an innovation that has diffused rather rapidly among Dutch police forces: out of a total of twenty-six, nine police forces have adopted SMS-alert and at least seven police forces are considering adoption. This rapid diffusion was strongly stimulated by the active diffusion strategy of the project manager of Midden- and West-Brabant. He enabled adopters, potential adopters and rejecters to exchange their knowledge and experience and to express, test and re-frame their perceptions about SMS-alert. Therefore, this case confirmed the importance of a diffusion policy for the diffusion of an innovation.

In this process of communication and learning two dominant meanings of the innovation – and the goodness of fit – can be distinguished. First, the functional meaning of the innovation – especially its (visible) advantages, the existence of competing innovations and the availability of test results – was very important in this case. Secondly, as a result of the fact that safety and citizen involvement were high on the political and societal agenda, the political meaning of SMS-alert also contributed to its diffusion. Finally, the institutional meaning of the innovation was not so strong in this case in comparison to the instrumental and political meaning of the innovation. Although some traces of coercive, mimetic and normative isomorphism and a growing legitimacy of SMS-alert were found, police forces are not (yet) forced to adopt SMS-alert in order to preserve their effectiveness and guarantee their legitimacy. However, we expect that the institutional meaning of the innovation will increase. Recently, both the Cabinet and the Board of Commissioners have announced the nationwide introduction of Burgernet and SMS-alert being the text message application of Burgernet. As a result, the policy windows at police forces that have not yet adopted SMS-alert seem to be declining. They will be forced to adopt both systems.

In short, the case confirmed the value of combining a functional and a constructivist approach in examining the diffusion and adoption of e-government innovations in the public sector. It demonstrates that for the explanation of innovation diffusion processes in the public sector, both the logic of consequence and the logic of appropriateness are important.

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