

New Media and the Coproduction of Safety: An Empirical Analysis of Dutch Practices

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Abstract

The new media have been argued to strengthen the coproduction of safety by reducing the costs of interactions between government and citizens and providing new communicative potential. Does that lead to relevant additional input from citizens in police work? Or are pre-existing interactions reproduced online? This empirical study of police practices in the Netherlands shows that new media indeed strengthen the coproduction of safety by enabling the police to reach more citizens and contact them 24/7. The police build new connections to citizens: mediated citizen networks form an important addition to offline networks. The costs are reduced most in a situation where new media replace face-to-face contacts between police and citizens, that is, in the coproduction of police patrol work. The article concludes that new media support the trend of *responsibilization*: the police use new media to build virtual networks with citizens and engage them anywhere and anytime in the coproduction of safety.

Keywords

coproduction, safety, new media, responsibilization

Mediated Coproduction: Optimists and Skeptics

Without input from citizens, the police would not be able to apprehend criminals and find lost persons (Brudney & England, 1983; Ostrom, 1978; Percy, 1978; Percy, 1987). The idea behind coproduction is that citizens are not regarded as passive “objects” of safety policies but rather as active “coproducers” of these policies (Ostrom, 1978; Percy, 1978; Percy, 1987). Although the idea of coproduction is decennia old, it experiences a resurgence (Alford, 2009; Bovaird, 2007; Brandsen & Pestoff, 2006; Meijer, 2011; Paarlberg & Gen, 2009). Police departments, especially in the United States, the United Kingdom and the Netherlands, pay renewed attention to the idea of coproduction of safety (Hughes, 2007; Hughes & Rowe, 2007). These practices can be understood within the framework of *responsibilization* (Garland, 2001). Responsibilization is the government strategy of giving other actors such as companies, housing corporations and also

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citizens more responsibility for creating safety (Boutellier, 2004; Garland, 2001). Coproduction with citizens is an important element in these strategies of responsabilization.

The new media such as cell phones and (mobile) Internet offer a range of new opportunities for coproduction between police and citizens by decreasing communication costs and creating a new communicative potential. The police can provide an unlimited amount of information to citizens in a structured manner on web sites and it can offer opportunities for interaction through social media. Additionally, the information can be provided real time so that citizens can directly be involved in time critical police work. New media may be able to decrease the costs of engaging citizens compared to current practices through mass media or face-to-face contacts and they may create new communicative opportunities to target specific groups of citizens. The contribution of new media to the coproduction of safety is being debated. Optimists assume that *more citizens* will interact with the police when these interactions are facilitated and citizens will be able to provide *more and better information* to the police (cf. Eggers, 2005; Leadbeater & Cottam, 2007). Skeptics will highlight that the incentives to engage in the coproduction of safety are hardly depended on media (cf. Keen, 2007). The use of new media will facilitate the *same citizens* to provide the *same information* to the police. In their argument, citizens cannot be expected to engage with the police just because this is facilitated by media with a new communicative potential and new media may only lead to additional costs. The debate between optimists and skeptics revolves around the following issue: do new media make a difference?

This article explores the idea that new media coproduction can strengthen police work by decreasing the costs for connecting to citizens and creating a new communicative potential and aims to answer the following research question: What is the added value of new media for the coproduction of safety? Added value is evaluated qualitatively in terms of the additional and for the police relevant information gathered through new media compared with the costs of using these media. This question is answered through an analysis of the literature and an empirical analysis of practices of new media enabled coproduction of safety in the Netherlands. The Dutch police have developed web sites to invite citizens to provide information for police investigations and they have set up a network for contacting citizens over the telephone to assist the police in finding objects or (lost or wanted) persons. An analysis of these practices will enhance our theoretical and empirical understanding of the added value of the mediated coproduction of safety.

Coproducing Safety: Mechanism, Motivations, Costs, and Benefits

Research into coproduction of safety has a long history and strong conceptual articles have been published since the seventies (Ostrom, 1978, 1996; Parks et al., 1981; Whitaker, 1980). Borrowing from Bovaird (2007, p. 847) the coproduction of safety can be defined as the provision of services through regular, long-term relationships between the police and members of the community, where all parties make substantial resource contributions. The idea of coproduction of safety can be positioned within the wider debate in the scientific and practitioner communities on citizen involvement in police work. The starting point was the traditional, government-centric, model of public safety. Bureaucratic procedures were central to police work and correct behavior was measured adherence to (legal) procedures. The New Public Management model was a reaction to the bureaucratic approach and emphasized the role of citizens as customers (Barzelay, 2001; Pollitt, 1990): police departments were to deliver good value to their customers—defined as the average citizens and not alleged criminals—and their performance was to be measured through objective indicators and customer satisfaction. This model has been heavily criticized for not being suitable for the public sector and one of its

Table 1. Forms of Coproducing Safety.

	Coproducing <i>investigative</i> police work	Coproducing <i>patrol</i> police work
Role of location	Generally non-critical	Often critical
Role of time	Generally non-critical	Often critical
Information richness	Rich information	Poor information

shortcomings was the failure to get citizens involved. Coproduction is a model that tackles this shortcoming and unleashes the potential of citizens.

How does the coproduction of safety work? The police engages citizens in their work to obtain information from citizens concerning suspects, victims or other conditions at a crime scene, information about lost persons, information about stolen goods, etc. (Newburn, Williamson, & Wright, 2007). Citizens can provide information in two different situations: they can help the police in their investigative work (Waegel, 1981) or they can assist the police in their patrol work (Klinger, 1997). These forms of coproduction differ in terms of time, place and information richness (see Table 1). The coproduction of investigative police work, such as solving a murder or rape case, does not strictly depend on time and place but generally requires rich information about various aspects of the crime and the suspects. In contrast, the coproduction of patrol police work, such as helping the police to catch burglars that have just broken into a shop and are now fleeing away, requires citizens to be at the right time and the right place to be able to provide information. The information is generally not rich: brief information about the whereabouts of the crime suspects suffices.

What motivates citizens to be involved in police work? Some citizens get engaged in police work for their individual interests (Alford, 2009; Brudney & England, 1983; Schneider, 1987): coproduction is expected to produce private benefits that accrue to the individual. Citizens, who have their house broken into, will be very willing to engage in police work since they sincerely hope that the police will find the perpetrators. For other citizens, group interests such as the interests of shopkeepers in an area may form a reason for engaging with the police (Alford, 2009; Brudney & England, 1983). A broad motive for citizens to engage in police work is the public or collective interest (Alford, 2009; Brudney & England, 1983; Schneider, 1987). Citizens will inform the police because they think this may help them to solve the crime and therefore create a safer society. This type of behavior is similar to the public service motivation of public servants (Perry, 2000): there is a desire to help to obtain the common good.¹

The effectiveness of coproduction can be evaluated in terms of its contribution to police tasks such as solving cases, apprehending criminals and, in the long term, strengthening the safety of neighborhoods: good information from citizens is the key to effective police work (Ostrom, 1978). Citizen engagement can also contribute to police legitimacy by increasing police responsiveness to citizens' and community needs (Hughes & Rowe, 2007, p. 317; Johnston & Shearing, 2003, p. 140; Koppenjan & Klijn, 2004, p. 366; Pestoff, 2006) and citizens may get a better idea and appreciation of the complexities of police work when they are engaged in it.

Although coproduction is largely seen as a positive development since it strengthens connections between the police and citizens, an important risk is that the benefits will not equally be divided over citizens (Pröpper & Steenbeek, 1998). Certain citizens may be able to capture the interest of the police and focus police capacity on their specific interests. Weaker interest such as the interests of immigrant groups or vulnerable groups in society (prostitutes, illegal workers, drug addicts) may be underrepresented. The police may become the "strong arm" of elites in society and the concerns of individuals with fewer (bureaucratic) capacities to attract the

attention of the police will not be dealt with, the police may attend to problems in richer neighborhoods rather than listening to citizens in low income and high crime areas.

Realizing coproduction may turn out to be complicated (Bovaird, 2007). Barriers both at the side of government (trust in citizens, finances, willingness, and knowledge) and at the side of citizens (trust in government, time, and ease of interactions) may hamper the development of these forms of coproduction (Alford, 2009). From a rational choice perspective, coproduction can be conceptualized as a process with costs (i.e., resource contributions) and benefits. Rational choices for engaging in coproduction are mediated by the level of mutual trust and, at the same time, coproduction may strengthen mutual trust.

The costs for the police are mostly the time needed to interact with citizens and the costs for the use of media (e.g., television broadcasts). The benefits for the police are better information and an improved relation with citizens. The costs for citizens are the costs for the use of media and, mostly, the time spent on interacting with the police. For some, contacting the police will have a cost since it may have a negative effect on their relations with others (e.g., when the contact is regarded as “snitching”). The benefits for citizens are a protection of their own life and property, a safer neighborhood and society and self-gratification (for being able to contribute to the common good; cf. Alford, 2009).

The cost-benefit ratios explain why the police only contact a limited number of citizens both in investigative and patrol police work: contacting citizens is expensive for both the police (when police officers need to visit and interview large groups of citizens) and for citizens (when they need to contact the police to find out how they can be of assistance). Interestingly, the new media may offer some opportunities to facilitate coproduction by reducing costs on both sides and providing new venues for interaction between police and citizens.

The Promise of New Media: Providing New Venues and Reducing Costs

The use of technology to support police work has an even longer history than the coproduction of safety. Since the introduction of the Telegraph in the New York Police Department in 1877, each major innovation has been used to strengthen the quality of police work (Manning, 1992, p. 349). Information is crucial to the work of the police and since the 1980s information technologies have been used to support information, intelligence and operation strategies. More recent approaches focus on supporting police officers as “knowledge workers” with new tools (Brown & Brudney, 2003). In all these approaches, information and communication technologies are used to support the internal workings of police organizations but new (communication) technologies offer the potential for strengthening contacts between police and citizens. These technologies may not be able to overcome all barriers but they can make coproducing safety easier and, according to the optimists, reducing the costs of coproduction will lead to more and better coproduction of safety. Optimists argue that changes in the cost/benefit ratio will make a difference: the police will develop new initiatives and more citizens will engage in coproduction. Skeptics will argue that changes in the cost/benefit ratio are not fundamental. Citizens’ attitudes in terms of basic motivations and trust in the police are more important determinants of their level of engagement in coproduction and, consequently, new media will only make it easier for the same citizens to provide the same information to the police.

The relation between technology and policing has been studied extensively in the literature on e-government in general (Homburg, 2008; Milakovich, 2011; West, 2005) and the specific literature on e-policing (Chan, Brereton, Legosz, & Doran, 2001; Povey, 2001). Traditionally, this literature tended to focus on the use of new media for strengthening the internal workings of public organizations in general and the police in specific and providing public services. More

recently, more attention is given to the use of new technologies for engaging citizens in the coproduction of services (Meijer, 2011). The literature, however, has yet failed to analyze the contribution of new technologies to the coproduction of safety.

To analyze the contributions of new media to the coproduction of safety, one can distinguish three phases in the process of coproduction. The first phase is the development of *opportunities* for coproducing safety when the police open up venues for citizens to engage in police work at a certain cost. The second phase is actual citizen *engagement*. The opportunities only result in practices of coproduction when citizens use them. The third phase concerns the *impact* of coproduction on police' effectiveness and legitimacy: the potential benefits. Coproduction only has an effect on police effectiveness if the information from citizens is actually used by the police to enhance safety. Coproduction only strengthens police legitimacy if citizens' engagement in the coproduction of safety actually changes their perceptions of the police.

This phase model is used to formulate hypotheses for the contribution of new media to police work. Since this is a new field of study, these hypotheses are not based on previous research but rather on the characteristics of new media and rational choice considerations of citizens for engaging in the coproduction of safety. These characteristics are compared with preexisting communication settings—mass media and face-to-face meetings—to formulate expectations regarding the differences between “old” and “new” practices (cf. Daft & Lengel, 1984; Sellen & Harper, 2002).

In the expectations for *investigative police work*, the new media are compared with mass media since current practices of engaging citizens in this type of police work are to a large extent based on television programs in which the police cooperate with media outlets to present information about wanted criminals to the public and request their tips. We expect that the new media provide more in-depth and personalized information to citizens than the mass media and at low costs but they will raise less attention and, therefore, they will reach a more limited audience than the mass media (cf. Daft & Lengel, 1984). The costs for obtaining the information rise for most citizens since they need to visit a web site instead of just watching television. At the same time, the costs for obtaining more comprehensive information drop since this information is available online. In consequence, the costs for coproduction drop for the small group that is interested in in-depth information from the police. This reduction in costs is expected to result in more police effectiveness since this group may provide additional information for the police investigation. The effect on police legitimacy is expected to be limited since the costs decline only for a small group of citizens but positive since police transparency is increased and new opportunities for interaction are being created. We formulate the following hypotheses concerning the use of new media in investigative police work:

Hypothesis 1: New media provide more in-depth and personalized information about police investigations to citizens than the mass media at limited costs.

Hypothesis 2: Compared with the mass media, new media will lead to additional forms of citizen engagement in police investigation by a limited group of citizens.

Hypothesis 3: Additional citizen engagement will enhance effectiveness of investigative work and strengthen police legitimacy.

For patrol police work, the new media are compared with face-to-face meetings since that is the usual medium used for engaging with citizens in this type of work. The new media's promise to police patrol work is to enable citizens and police to contact each other anywhere, directly and 24/7 and to target communications at groups of individual citizens. This use of new media drastically lowers the costs for obtaining timely and relevant police information. Citizens are informed about police activities and about their need for information and they can react directly and at a

limited cost. Consequently, more engagement from citizens is expected. The increased engagement can result in more effective police work through more witness information and more legitimacy since higher numbers of citizens are connected to the police.

We formulate the following hypotheses for the use of new media in patrol police work:

Hypothesis 4: New media enable larger groups of citizens to engage in time critical situations with the police than face-to-face contacts at limited cost.

Hypothesis 5: More citizens are engaged in patrol police work than when citizens are contacted face-to-face.

Hypothesis 6: Increased engagement will lead to gains in effectiveness of patrol police work and more police legitimacy.

In sum, the new media may provide new ways for coproducing safety in patrol and investigative police work. The police is interested in these forms of coproduction to enhance their effectiveness and legitimacy. Citizens may be interested for reasons related to their personal, group or public interest. New media promise a reduction of the costs of coproduction but, at this stage, we know little about actual practices. Our understanding of new forms of coproducing safety needs to be enhanced through empirical research to explore whether the promise of new media is being delivered.

Research Methods

Based on our phase model for studying the effects of new media on the coproduction of safety, the following analytical framework was developed and used for this empirical research:

1. *Opportunities for citizen engagement.* Which opportunities for coproduction do the police create? How much information is presented to the public in which form? To what extent do these opportunities differ from preexisting forms of coproducing safety? What are the costs of these initiatives? What is the role of new media?
2. *Level of citizen engagement.* Do citizens engage with the police in the coproduction of safety? How many and which citizens participate? What is their level of participation (passive/active)? What is content of their contributions?
3. *Impact on effectiveness and legitimacy.* What are the effects of the coproduction of safety? How does coproduction influence police effectiveness? How does coproduction influence police legitimacy?

The objective of the research into new ways of coproducing safety is to enhance our understanding of the *mechanisms at work*. The research is used for a qualitative exploration of the hypotheses which were formulated on the basis of the logics of coproduction. This article does not pretend to present a systematic quantitative analysis of all new practices; it can only form a preliminary to a more systematic analysis of new practices. To this end, cases were identified that can be expected to be *most informative* in terms of the mechanisms at stake (Yin, 1994). For practical reasons, we limited our research to cases in the Netherlands.

A broad range of new practices of coproducing safety was identified through various methods: Google searches, notifications in newspapers, review of the scientific literature and expert interviews. These methods resulted in a list of 17 initiatives both in terms of patrol and investigative police work. Two cases were selected on the basis of variation in police roles and their relation with coproduction through other media (mass media or face-to-face contacts): Politieonderzoeken.nl (Police Investigations) as a case of investigative police work with

coproduction usually being carried out through mass media and Burgernet (Citizens Net) as case of patrol police work with coproduction usually being carried out through face-to-face contacts.

A variety of research methods and a secondary analysis of existing data were used to gather data about these new practices. The web sites of the two initiatives were analyzed systematically on the basis of the analytical framework for information about the initiative and opportunities for coproduction by quantifying assessing the information available and qualitatively evaluating this information. Four in-depth interviews were held with the current and previous project managers of these two initiatives using a questionnaire that was developed on the basis of the analytical framework to gather information about police objectives and impact of these forms of coproduction. Evaluation studies were available for Police Investigations and Citizens Net and a secondary analysis of the data in these studies was conducted to obtain information about citizen participation and impact. The qualitative evaluation study of Police Investigations was based upon the knowledge and experiences of the author of that study, the police chief who initiated this initiative (Smilda, 2007). Realizing that the involvement of the author could have influenced his assessment, these findings were checked through web site analysis and two additional interviews with the current program manager. An extensive evaluative study was available for Citizens Net (Van der Vijver et al., 2009). This evaluative study is based (a) on an analysis of monitoring data about Citizens Net actions, numbers of participants and response; (b) survey among participants and non-participants and (c) interviews with a variety of police officers. The secondary analysis of the data of this evaluative study focused on their data about actions, their data about citizen engagement and their data about the effects of Citizens Net in terms of effectiveness and legitimacy. A media analysis provided additional information about the initiatives and about the way these initiatives are presented in the media. This media analysis consisted of a qualitative assessment of five television broadcasts (national and local television), a variety of newspaper articles and two prominent blogs and an analysis of these media presentations on the basis of the analytical framework.

For the case Police Investigations, citizens could not be surveyed since they are anonymous. Citizen reactions could only be analyzed since these reactions are publicly available. Police Investigations presented seven files in which the police asked for input from citizens. All citizen input was analyzed in six of these files. The seventh file contained a large number of comments from citizens (367) and therefore the analysis was limited to a systematic selection of 94 comments. These comments were analyzed both for their content (relation to the case, tip or otherwise, in-depth or superficial) and their form (use of language, respectfulness, consistency of argument). A coding scheme was used and coding was conducted by a research assistant. Coding was discussed with and reviewed by the researcher to check for reliability. The analysis focused on identifying whether the information could be related to the investigation and whether citizens gave indications of the effect of this form of coproduction on their level of trust in the police.

Coproducing Investigative Police Work Through New Media

The first case study focuses on investigative police work and was conducted to explore Hypotheses 1, 2, and 3. The case is structured along the lines of the analytical framework (opportunities for citizen engagement, level of citizen engagement, and impact on effectiveness and legitimacy) and on the basis of this empirical material the three hypotheses are discussed.

Opportunities for citizen engagement. Police organizations around the world have—often popular—television programs to engage citizens in solving crime. In addition to these programs, the Dutch National Police have set up the web site *Police Investigations (Politieonderzoeken.nl)* to engage citizens in solving hard crime (e.g., homicide, rape). At the time of the assessment in 2008, it presents seven investigations that have already been shown on television but have not

been solved yet (i.e., “cold cases”). Photos, videos, references to newspaper articles and textual descriptions are presented to inform citizens about the case. Specific questions regarding witness information are presented to citizens and citizens are asked to respond through e-mail or telephone. A respondent from the police highlights that the web site creates an accessible opportunity for coproduction since the information is available 24/7: citizens can review the information when they like.

A respondent from the police concludes that these opportunities come at a limited cost. The content management of the web site has been outsourced to an IT firm and he indicated that setting up the web site cost about 5,000 euro and publishing and managing the information for each case costs less than 1,000 euro. Employees at the communication department spend some time to sort out the reactions in general comments, remarks about other issues, tips, etc. Only the tips are sent to the detectives and they need some time to process these tips. A respondent from the police argues: “But tips is what we want.” There is no indication that this leads to tips that are useless but time consuming.

Level of citizen engagement. There is substantial interest in the web site: 200.000 unique visitors have visited Police Investigations in the period December 2006 through June 2008 which amounts to 2000 visits per week. 414 reactions have been posted in the period December 2006 through June 2008 which amounts to 4.6 reactions per week. Most of these reactions, 367 comments, are related to one investigation. However, many reactions are not shown for privacy or security reasons. A respondent from the National Police indicates that they have received a total number of 900 reactions over that same period (i.e., 10 per week).

Most reactions are posted when an investigation has been on television. The timeline of one homicide investigation illustrates this impact. This investigation is published on the web site on December 4, 2006, and national television channels mention this investigation either the same or the following day. There are 941 visits on December 4, 26,099 on December 5, and 12,683 on December 6. The number slowly drops back to the same level as before on the following days. The number of comments shows the same pattern: 4 comments on December 4, 60 on December 5, and 60 on December 7. Reactions keep coming in but drop to the same level as before the mass media attention.

The content analysis provides information about the motives of citizens for wanting to engage in police investigations and the respondent from the National Police confirms these motives on the basis of their contacts with citizens. Public interest is the main motive for engaging in the coproduction of safety. The content analysis and interviews indicate that many citizens want to cooperate in a police investigation to contribute to public safety. Additionally, group interests play a role. The content analysis shows that family and friends of the victim engage in the police investigation because they want justice to be done. Finally, individual interests play a role in a rather particular manner: many citizens visit the web site as a form of “entertainment.”

Most of the reactions present information that could be relevant to the investigation (although also a substantial number of reactions, 16%, refer to the initiative as such or concern requests for more information). Thirty-eight percent of the comments present answers to the specific questions asked by the police and 41% of the reactions are more indirectly related to the investigation. An example is the following post in reaction to a question from the police about the nature of the wound of a victim:

Looking at the head wound, I have to think about a big tent peg or something like that, it certainly is something with a + shape and that is often the form you use to put something firmly in the ground. (Police Investigations, Sjaak Gerwig, December 5, 2006, my translation)

Impact on effectiveness and legitimacy. Does the information from citizens help the police to solve crimes? Hard quantitative information is not available but the web site analysis indicates that citizen information input through Police Investigations has at least contributed to solving one homicide investigation. The police have posted the following message on the web site:

To engage citizen to the best in solving this crime, the investigation has been posted on Police Investigations. In total, 14 new facts have been published on the website. 21 e-mails from citizens were received of which 13 were investigated. Publishing the investigation on this website has indirectly contributed to this investigation. (Police Investigations, Popke Karsten, March 15, 2007, author's translation)

Additionally, input from citizens in reaction to another investigation led to six new testimonies. This is substantial since the investigation had been on television in 2006 and this had not resulted in new information and neither had sending 1,500 leaflets to citizens in the area had any effect.

A respondent from the police indicates that Police Investigations has also led to crucial information that helped to solve the case of a burglary into a museum in The Hague. In other cases, citizens come with useful information to help the investigation but the information was not sufficient to solve the crime. A respondent mentions that in the Sjaak Gerwig case citizens came with a scenario that had not yet been developed by the police team and that was worth investigating. This shows that the information provided by citizens does not only come from witnesses: citizens can also help the police as independent "experts." A respondent from the police highlights that they cannot know for sure that this information would not have been obtained through other media but, still, these cases had already been published through other media and still new information was obtained through Police Investigations.

Do these web sites affect police legitimacy? Citizens could not be surveyed because of privacy considerations and the police had not gathered information about changes in citizens' perceptions resulting from these web sites. An indication for a positive effect is the fact that tens of citizens send messages to praise the police for starting these web sites. On the other hand, a lack of openness may also have a negative effect on trust in the police. The following post is illustrative:

I had planned not to get angry anymore about what is going on around the [victim's name] case but it keeps simmering. Why is no new information added to the site? This was promised under "investigation" but has NOT happened so far. (Police Investigations, Sjaak Gerwig, March 26, 2007, my translation)

A respondent from the police argues that the police can not present all information since this could harm the police investigation. He emphasizes that strengthening citizens' trust has never been an objective of this web site.

Exploring the hypotheses. In sum: Do the actual practices of new media use in investigative police work stand up to their promise? The "promise of technology" is evaluated on the basis of the empirical material about Police Investigations.

Hypothesis 1. *New media provide more in-depth and personalized information about police investigations to citizens than the mass media at limited costs.* This research provides some support for this hypothesis: new media are used to present extensive files through Police Investigations and the costs of using this medium—costs for web site and costs for processing information and feedback—are limited. When we take both the costs for setting up the web site and the costs per case into account, the cost per citizen reaction is just above 13 euro. Current practices do not yet use the opportunity to personalize information: all users obtain access to the same information.

A disadvantage of the Internet is that it is difficult to generate attention from citizens. The cases dealt with this disadvantage by generating free publicity in the mass media which consequently led to traffic to the web sites. This indicates that new media are embedded in a multimedia strategy. In this media mix, the Internet can be an important addition since it can be used to reach specific target groups.

Hypothesis 2. Compared with the mass media, new media will lead to additional forms of citizen engagement in police investigation by a limited group of citizens. Compared with the interest for the television programs on police investigations in the Netherlands, the number of visitors to the web site is rather limited. The most important television program attracts more than 800,000 viewers, which is much higher than 2,000 visitors per week for Police Investigation. The number of information inputs from citizens after the television broadcasts is from 9 for low profile cases to 250 for high profile cases and the average number of 10 per week for Police Investigation seems a substantial addition to these inputs. Hence, this hypothesis is supported since we found additional engagement from a limited group of citizens.

Hypothesis 3. Additional citizen engagement will enhance effectiveness of investigative work and strengthen police legitimacy. This empirical material provides limited support for this hypothesis. The impact of this site is limited: there is no hard evidence that these sites have a strong effect on police' effectiveness. Soft evidence suggests that Police Investigations generates new information inputs from citizens which contribute to solving cold cases. Citizen input through police investigations have at least contributed to solving one homicide investigation but the contribution of the citizen input is unclear. The effects on police legitimacy are unclear. On one hand, Police Investigations meets with positive response from citizens. On the other hand, visitors to Police Investigations call for more police transparency. They feel that the police are not open about their work and this has a negative effect on their level of trust. Rising expectations about engaging citizens in investigative police work may have a negative effect on police legitimacy.

Lessons from this case. What can we learn from this case study about the coproduction of safety? Compared with the mass media, a limited number of additional citizens are reached through new media but the additional costs are limited. In his discussion of Internet economics, Anderson (2006) has highlighted that new media create the opportunity to reach the "long tail": products can be offered to a limited group of interested citizens. New media lower the costs for reaching specific target groups and render the "long tail" accessible. New media open new markets since they reduce transaction costs.

A similar "long tail" logic applies to the coproduction of safety: new media lower coproduction costs and therefore open up new forms of citizen engagement. The mass media can only provide limited information about these police investigations whereas the new media can also provide all sorts of background information. The mass media have already picked the low hanging fruit in terms of citizens who can provide information about high profile cases but new media can help to obtain relevant information about cold cases. The new media create the opportunity to reach the "high hanging fruit": additional citizens and obtain additional information.

Coproducing Patrol Police Work Through New Media

The first case study focuses on patrol police work and was conducted to explore Hypotheses 4, 5, and 6. The case is structured along the lines of the analytical framework (opportunities for citizen engagement, level of citizen engagement and impact on effectiveness and legitimacy) and on the basis of this empirical material the three hypotheses are discussed.

Opportunities for citizen engagement. The Dutch police have developed a new system for engaging citizens in patrol police work called Citizens Net. In each city, citizens receive a leaflet and are asked to sign up for the system and provide information about their home or work

address. The system consists of a database with information about citizens, a geographical layer to enable targeted communication at citizens and a system for sending a voice or text message to large groups of citizens. The system was tested on a small scale in 2004 in one city and on a larger scale in 2008 in nine Dutch cities. In 2013, Citizens Net will be implemented in every police department in the Netherlands.

The police contact this network of citizens this real time: directly after a crime or missing person has been reported. The police emergency center uses an automated system to send citizens a text or voice message to ask for information. Citizens are targeted on the basis of their geographical characteristics. Research by Van der Vijver et al. (2009, p. 40) shows most actions—106 actions (55% of all actions)—are started in cases of theft (including breaking entry, theft, robbery, and street robbery). Finding missing persons is the second main reason to start an action (50 actions, 26%). Other actions are started for minor offenses such as physical or verbal violence, suspect situations, and vandalism.

The operational costs of Citizens Net consist of the costs for sending a message to citizens and processing the information. An average action is sent out to 600 citizens and hence the police have to pay the costs for sending out a text or voice message (i.e., less than 12 euro). These costs are doubled since the police also send a message when they end the action. Processing the information takes place at the call center: facilities for processing the information are already in place and although Citizens Net may demand a few extra actions from police personnel, according to the police respondent the additional costs are limited. The system costs—technology and maintenance and support personnel—are more substantial. The costs for the national IT system which is used by all regional departments are one million euro per year and, additionally, each department has costs for maintenance and support personnel (between 0.8 and 2 full-time equivalent [fte] per department).

Level of citizen engagement. Citizen interest is high with an average of 4.6 % of the population in the nine cities signing up for participation in Citizens Net. No quantitative data on participation by immigrants was available—and Dutch law does not permit the police to register this information—but the respondent from Citizens Net indicates that participation of immigrants is relatively low. Young people and women are also underrepresented. The evaluation of Citizens Net in the nine cities shows that only 24% of the participants are less than 36 years old. Most of the participants, 62%, are male.

Research by Van der Vijver et al. (2009, p. 49) shows that most citizens participate in Citizens Net because they think that “you should do your part as a citizen” and the desire to contribute to the safety in the neighborhood is also a driver for a majority of citizens. In Alford’s (2009) terms these can be seen as motivations on the basis of public interest. Expected effects in terms of apprehension of criminals and a safer neighborhood and the idea of better hold on the safety in the neighborhood—motives based on group interest—score somewhat lower.

Impact on effectiveness and legitimacy. Is the information from citizens useful? The following anecdotal evidence provides insight in the nature of this information.

Patrolling police officers received a notification that a person had been robbed in the street. The victim provided a good description of the perpetrator and indicated his flight direction. The police started a Citizens Net action and asked 477 participants to look out for the perpetrator. One participant called the police to tell them that he had seen him in a bar in town. The perpetrator left the bar and was followed by the police. They apprehended him in the street. (Web site Citizens Net, February 18, 2009, my translation, shortened for reading purposes)

Van der Vijver et al. (2009, pp. 41-42) show that the hard contribution of Citizens Net to patrol police work is substantial: 9% of all the cases that were qualified as fit for a Citizens Net action

are solved on the basis of information from this action and according to the respondent from the police this number rises in regions where both the police and citizens have more experience with Citizens Net. The number of 9% seems limited in terms of the total number of actions but it amounts to more than 50% of the successful police actions. This indicates that Citizens Net is not a miracle product to solve all crimes but it certainly forms an important addition to the existing means. A critical note is that we do not know how many actions would have led to successful police actions without the use of Citizens Net.

How does Citizens Net affect subjective safety? Do citizens feel safer? The evaluation study indicates that Citizens Net has no effect on citizens feeling of safety in their own neighborhood. Van der Vijver et al. (2009, p. 51) argue that these feelings are based upon their own perceptions of the neighborhood and these are not affected by Citizens Net. At the level of the city, Citizens Net does have a positive effect on subject safety. Van der Vijver et al. (2009, p. 51) indicate that these feelings are not based on direct perceptions but on mediated perceptions. These mediated perceptions are influenced by the creation of Citizens Net and the information they receive about how the police work and what the results of these actions are.

The evaluative study also measured the effect of Citizens Net on satisfaction with the work of the police. Van der Vijver et al. (2009, p. 54) found that participants in Citizens Net were already more satisfied than the control group with the work of the police before the pilot project started. The pilot project had a positive effect on their satisfaction and increased their satisfaction more than the control group. This indicates that Citizens Net has a positive effect on police legitimacy.

A possible negative effect was brought forward by a local councilor in Nieuwegein. He indicated that he felt that Citizens Net stimulates social control and distrust among citizens and that the system could lead to a decline in social cohesion. He even argued that it could lead to dangerous situations if citizens would feel stimulated to go after criminals. The project manager of Citizens Net denies that these dangerous situations have occurred. Nevertheless, the police have decided that Citizens Net should not be developed into a proactive instrument in which citizens that have signed up for Citizens Net actively call the police when they see something suspect. The police emphasize that citizens are only expected to respond to calls from the police. This decision can be regarded as an effort to limit undesirable side effects.

Exploring the hypotheses. In sum: Do these actual practices of new media use in investigative police work stand up to their promise? The “promise of technology” is evaluated on the basis of the empirical material about Citizens Net.

Hypothesis 4. New media enable larger groups of citizens to engage in time critical situations with the police than face-to-face contacts at limited cost. This research provides some support for this hypothesis: the combination of information technology at the side of the police (database with information about participants, geographical layer for choosing relevant participants, system for managing Citizens Net actions, Internet site with further information) and (cell) phones at the side of citizens form a perfect couple: large groups of citizens can be reached in time critical situations. The costs of using new media are considerable: operational costs are limited but an infrastructure has been developed and needs to be maintained. At the same time, contacting all these citizens through face-to-face contacts would certainly be much more expensive and probably not even feasible.

Hypothesis 5. More citizens are engaged in patrol police work than when citizens are contacted face-to-face. The research provides strong support for this hypothesis: citizen interest is high with an average of 4.6 % of the population in the nine cities signing up for participation in Citizens Net. This level of participation is much higher than what could be reached through traditional face-to-face contacts. The system is popular with citizens who participate because of a

variety of reasons. They see engaging with police work that as their duty and they want to strengthen public safety. The evaluation indicates that the participants are relatively often White, male and older than 36. Resulting practices may strengthen the position of middle aged White men vis-à-vis the police. This lack of representativeness may not be a problem when it comes to findings lost persons but it may both reflect and affect trust of immigrants, young people and women in the police and lead to skewed perceptions of safety.

Hypothesis 6. Increased engagement will lead to gains in effectiveness of patrol police work and more police legitimacy. Citizens Net plays a substantial role in patrol police work: more than half of the successful police interventions were benefitting from information from citizens if a Citizens Net action had been started. 9% of all the cases that were qualified as fit for a Citizens Net action are solved on the basis of information from this action. This indicates that Citizens Net is not a miracle product with which all crimes can be solved but it certainly forms an important addition to the existing means. Citizens Net has strengthened the level subject safety of subjective safety at the level of the city. Although citizens who signed up for Citizens Net were already more satisfied with the work of the police than other citizens, the implementation of Citizens Net still had a positive effect on police legitimacy.

Lessons from this case study. What can we learn from this case about the coproduction of safety? The costs for coordinating action between police and citizens have dropped dramatically. Through Citizens Net, information from the police is easily and at a low cost combined with information from citizens to strengthen patrol police work. Coordination takes place in a network that is built up by the police and they can activate this network in the case of an emergency to obtain relevant information.

Space has a double meaning in this new practice. On one hand, space has become important since Citizens Net actions are specifically targeted at citizens in a certain area. On the other hand, space becomes irrelevant because citizens can be contacted wherever they are as long as they carry their cell phones. In this sense, Citizens Net can be characterized as a form of mobile government (Trimi & Sheng, 2008) or even ubiquitous coproduction (Anttiroiko, 2005): contact between citizens and the police can always and everywhere be established.

Comparing New Practices of Coproduction

The results of the two case studies are summarized in Table 2 below:

The table shows that the level of engagement and the effects on effectiveness and legitimacy are much stronger in the case of Citizens Net than in the case of Police Investigations. The difference can be explained in terms of the added value of the new media and the characteristics of the specific type of coproduction. The added value of the use of a web site for the coproduction of investigative police work is that richer information can be presented. The added value of the use of telephone contacts for the coproduction of patrol police work is that information can be provided that is dependent on time and place. The results show that enhancing the richness delivers less added value than increasing the immediacy of information. The untapped potential of citizens that want to participate in investigative police work but need richer information is smaller than the untapped potential of citizens that need information on a specific time and place to be able to assist the police.

The differences in added value can be understood by focusing on interaction patterns. The new media enable the police to communicate effectively with large groups of citizens: contacting these citizens through mass media and through face-to-face contacts would both be too expensive. The intermediate level could be contacted through local media but in the Netherlands these do not always exist or do not attract much attention from citizens. Previous patterns of

Table 2. Findings of the Case Studies.

	Police investigations	Citizens Net
Opportunities for citizen engagement	<ul style="list-style-type: none"> - Web site with information about “cold cases” and specific questions - Citizens use forum or telephone to provide information - The costs for using Police Investigations—web site and processing information—are limited. 	<ul style="list-style-type: none"> - Information requests through text or voice mail to targeted citizens - Citizens provide information over the telephone - The costs for using Citizens Net—system and processing information—are considerable.
Level of citizen engagement	<ul style="list-style-type: none"> - Limited compared to engagement through mass media: 2000 visitors to the web site and 10 reactions per week 	<ul style="list-style-type: none"> - Substantial compared to face-to-face contacts with citizens: nearly 5% of the population are members of Citizens Net.
Impact on effectiveness and legitimacy	<ul style="list-style-type: none"> - Soft evidence indicates that citizen information has contributed to solving one homicide investigation - Police legitimacy is not strengthened since only a limited group is engaged and they raise some doubts about police’ openness 	<ul style="list-style-type: none"> - Hard evidence shows that Citizens Net accounts for more than 50% of the successful police actions - Police legitimacy is strengthened since a substantial group of citizens is more satisfied with the police

interactions followed two basic patterns: *mass interactions* through mass media and large call centers to process input from citizens or *direct interactions* through face-to-face contacts between individual police officers and citizens. Citizens Net introduces a new pattern of interaction: *group interactions* through contacts between local police departments and targeted groups of citizens. These group interactions form an important addition to the other interaction patterns and enhance police effectiveness and legitimacy. Police Investigations operates at the same level as the mass media and, therefore, the use of new media has limited added value.

Coproducing Safety in an Information Age

This empirical study of police practices in the Netherlands shows that new opportunities for coproduction between police and citizens have been developed for both investigative and patrol police work. These practices have experienced much media coverage and they have been able to generate fairly extensive interest from citizens. Citizens are willing to participate to contribute to the common good. Citizen engagement has provided a modest but useful addition to the use of mass media in investigative police work and a substantial addition to the existing opportunities for engaging citizens in patrol police work. The promise of new media is realized to a much larger extent in patrol police work than in investigative police work. Both types of engagement may strengthen police legitimacy although a lack of openness from the side of the police may form a barrier to the development of trust.

Let us now return to the research question: What is the added value of new media for the coproduction of safety? The cases have illustrated that the new media facilitate contacts between citizens and government either by reaching the “long tail”—reaching additional groups of citizens—or by creating forms of “ubiquitous coproduction” in virtual networks—being able to interact with citizens everywhere and 24/7. The optimists seem to be right in the case of police patrol work and there is some ground for their optimistic vision when it comes to investigative

police work. The case study of Police Investigations provides some support for skepticism since only a limited group of citizens is reached through the new media but the costs are limited and, therefore, using new media still seems cost effective. The case study of Citizens Net shows there is little need for skepticism. The police use new media to capitalize on the potential of civil society to boost the effectiveness of police work. The costs are considerable but much lower than they would be if the same level of coproduction was to be reached through traditional forms of coproduction. In that sense, one could conclude that the most important contribution of the new media is in line with a consistent finding in media studies: New media create new connections between social actors at limited cost (cf. Sproull & Kiesler, 1991; Walther, 1996; Wellman et al., 1996). When it comes to the coproduction of safety, new media create new connections between police and citizens.

The hypotheses concerning the relation between two forms of coproduction of police work and new media can all be maintained and could be tested further in a larger number of cases. The following aspects demand further attention:

- What is the role of national institutions and culture? To what extent do the positive effects result from a high trust society such as the Netherlands?
- What is the role of various sorts of technologies? Can web sites also have value for patrol police work? Do we find similar patterns for the social media?
- How robust are the new interactions patterns? Is the motivation for citizens to engage of a permanent nature? Or is it only a brief hype?

What can we learn from the success of Citizens Net? The success of Citizens Net can be explained in terms of building a communication network that fits the specific demands of coproduction of police work. Building such a network can only be cost effective with new media and the network of citizens enables the police to target the right group of citizens at the required level of richness (Daft & Lengel, 1984) and the right time and place. Segmentation is crucial since citizens should only be alerted when they are actually in the position to contribute to police work. This research shows that new communication technologies enable the development of (basic) communication networks that extend from the police organization into society. The nature of the communication network is still basic—it is based on telephone interactions—but that the police are already experimenting with new technologies—the social media—to extend this network of citizens that engage in the coproduction of safety (Meijer, Grimmelikhuijsen, Fictorie, & Bos, 2011).

Although these positive effects were identified, one could also think of (potential) risks of these risks. These risks build on the normative debate in the literature about the “dystopian dangers of unreflexive communitarism” (Hughes & Rowe, 2007, p. 318). The new forms of coproduction in patrol police work could result in a privileged (customer) position of certain groups of citizens, men above 36, at the expense of younger, female and migrant citizens. Youths and migrants—in this situation not regarded as the customers of the police—may not only face surveillance from the police but also increasingly surveillance from other citizens. Citizens Net does not stimulate practices of mutual surveillance as we have seen in authoritarian states but the new use of technology certainly contains the risk of stimulating these practices. Does Citizens Net lead to a “happy (extended) family” or to “neighbors from hell” (cf. Hughes & Rowe, 2007, p. 322)? Whereas many analyses of state surveillance focus on the risks of centralized technologies such as cameras, iris scans, face detection (Webster, 1996), decentralized systems such as Citizens Net may form a more important step in the direction of developing a surveillance society (Lyon, 2001) or “maximum security society” (Marx, 1988): citizens will increasingly face

surveillance by their neighbors. This use of new media transforms surveillance transformed into *coveillance* (Mann, Nolan, & Wellman, 2003, p. 338). Follow-up research is needed to analyze these pros and cons more specifically and enhance our understanding of the alleged transformation of surveillance in *coveillance*.

The new forms of engagement can be understood from the angle of a traditional debate about new technologies: Do they empower citizens or enhance surveillance? This study shows that the new media do both: Citizens are empowered through the information they receive and the opportunities for interaction with the police. At the same time, they seem to become accomplices in the surveillance structure of the police. This surveillance structure produces law and order but can also be regarded as a structure of oppression. The crucial issue is the structure of these new networks and this issue merits further research. Who becomes part of the surveillance—or *coveillance*—structure of government and who will be the object of surveillance by his peers? These questions are becoming even more urgent since this research has shown that new media support the trend of *responsibilization*: The police use new media to build virtual networks with citizens and engage them anywhere and anytime in the coproduction of safety.

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Note

1. Coproduction assumes a win-win situation for police and citizens. This is frequently the case but there are situations in which citizens have other interests than the police. Citizens at raves may want to use illegal drugs and the police will try to stop this. In these situations, the interests of citizens clash with issues of public safety and they will not be motivated to engage in the coproduction of safety.

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