

WP5 - SOCIO-ECONOMIC IMPACTS OF REHABILITATION STRATEGIES

D15 report: Public acceptance
of rehabilitation action and
communication with the public



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***CARE-S - Computer Aided
REhabilitation of Sewer networks***



COMPUTER AIDED REHABILITATION OF SEWER NETWORKS
Research and Technological Development Project of European Community

CARE-S

WP 5 – SOCIO-ECONOMIC IMPACTS OF REHABILITATION STRATEGIES

Task 5.3- Public acceptance of rehabilitation action and communication with the public

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September 2005





SANITATION AND QUALITY OF LIFE

workpackage 5 | task 5.3

SUMMARY

Since the beginning of the 1990s, local public services operators in both the public and private sectors have been paying greater attention to user “satisfaction” and “demands”. Thus, a new model of public administration was gradually implemented. Such a model intended to be driven by three main principles: quality of service ; proximity towards customers ; evaluation. This report, based on the fieldwork done under task 5.2, aims at providing guidelines that could help local operators to set up a “consumer policy” especially in what concerns to sewer failures and rehabilitation works.

We propose that, in case of failures, interaction with the public should follow a strategy that would privilege the following dimensions: **accessibility** to sewerage utility, which means that the way of approaching the sewerage utility in case of need should be an easy one, diverse and previously known by customers; **commitment** on solving customer’s problem in a reasonable time; and delivery of proper **explanation** about what happened, why it happened and how the utility solved or intends to solve the problem.

In what concerns to rehab works, the first effort should be the one of anticipating potential impacts and limiting them through proper planning. We propose that, in case of works, interaction with the public should follow a strategy that would privilege the following tools: the **meeting** with the population before works start, which is an opportunity to establish a direct contact and dialogue with users and to listen to their possible specific concern; a procedure to deliver **pamphlets** which contain information awaited by the public; a process of **mediation** along works occurrence aiming at solving unexpected problems.

All suggestions have to be adapted to the importance and duration of the work and to the technology used.

ACKNOWLEDGMENTS

This research was pursued with contribution and participation of several individuals and institutions, both in Portugal and France.

Particularly important were the contributions of both Amadora-Oeiras and Nantes Metropolis end-users. In what concerns to the first, the team thanks eng. Julieta Marques and Helena Silva for their support on providing the necessary data for research pursuit. Whith regard to Nantes Metropolis, the team thanks Michel Blanche and all the staff of the sanitation department for their permanent support, their patience and their kindness.

Apart from the above-mentioned institutions, the research implied the collaboration of several representatives of Amadora and Oeiras local districts. The team is grateful to all of them, especially to the local district of Brandoa, who gave a vital contribute on focus groups preparation.

Finally, this project involved the participation of an amount of young and recently graduated social scientists, which must be signalised. On the portuguese side, we would like to emphasise the engagement of Sara Almeida, Pedro Serafim and Bruno Guarita along field work. A special expression of gratitude to Sara that, after fieldwork, continued to work with us on data treatment and analysis tasks. On the french side, we would like to mention the contribution of Virginie Waechter who managed with a professional effectiveness the preparation and the beginning of the survey in Nantes.

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INTRODUCTION

Framing: the CARE-S Project

Research subjacent to this Report was developed under the Project *Computer Aided Rehabilitation of Sewer Networks* (CARE-S). Sponsored by the fifth European Union Framework Programme, key-action *sustainable management and quality of water*, CARE-S aims to establish a rational framework for sewer network rehabilitation decision-making. At the end, such framework should be able to assist sewerage managers, the end-users, on decision-making about *when, where and how to rehabilitate, at a minimum cost and before serious failures do occur*.

CARE-S is composed by ten workpackages (WP), through which diverse features of the phenomena are approached. Those features are, more specifically, related with performance indicators for sewer rehabilitation (WP1); validation of structural condition (WP2); hydraulic performance (WP3); technological information system for rehabilitation (WP4); socio-economic consequences of rehabilitation related issues (WP5); multi-criteria decision support (WP6); sewer network rehabilitation management tool (WP7); its testing and validation (WP8), jointly tasks directed to results dissemination and project management (WP9 and WP10).

The present Report is part of WP 5 and constitutes the deliverable of task 5.3.

WP5 comprehends three tasks. Task 5.1 aimed at the conception of a criteria framework, representing social costs, for guidance along decision-making processes about sewer rehabilitation. Task 5.2 was conceived in order to allow a systematic knowledge about impacts of both sewer failures and rehabilitation works on individuals and communities quality of life. Task 5.3 main aim is the conception of a guidance for communication with the public, namely under rehabilitation works or failures circumstances.

Task 5.3 : a guidance for the design of a customer policy

The main aim of this task is the conception of general guidance for the design of a customer policy, namely in face of critical events such as sewer failures and rehabilitation works.

This task is based on the fieldwork done under task 5.2, namely preliminary interviews with representatives and technical staff, focus group sessions with users and the survey developed to capture individuals' views and experience of sewerage related critical events. All along this fieldwork data have been collected in what concerns to the following dimensions of the communication with the public : on the one hand, the actions that are undertaken by local authorities and the encountered difficulties ; on the other hand, the judgments that users carry on them and their own expectations.

It is worth to emphasise that this Report should be envisaged as a point of departure for those who intend to go further on the reflection about customer policy & sewerage. As far as it concerns to sewerage managers, guidance here enclosed didn't aspire more than to serve as general support to customer policy design, which is usually diverse because it has to incorporate target-area particularities.

Three sections compose this Report. Section one and two emphasise the importance of promoting a higher engagement of citizens on sanitation management and presents some of the main principles on which such management should rest. Section three contains general guidance for customer policy design, under failures and rehabilitation works situations.

1. RE-CONVOKING USERS TO SANITATION MANAGEMENT

Change in the direction of modernity initiated a new way of dealing with waste and sewerage. One of the marks of this was the gradual displacement of sewerage issue from the individual to the institutional arena. Sanitation became an “expert matter for experts”, driving out individuals from its governance. Presently, the response to a set of new challenges implies a higher engagement of users on water and wastewater governance, turning imperative the effort of re-convoking them to the system.

In pre-modern societies, wastewater was, in great part, (un)handled by individuals and households. Cesspits and streams appeared as the most prominent waste repositories. Meanwhile, under the auspices of hygienist current (cf. Matos, 2000), a new way of dealing with sewage got started in Europe around 19th century. This one stood, as known, on a network system of water delivery and wastewater drainage.

Presently, sewer systems are one among multiplicity *expert systems* with which individuals live together. What makes them *expert systems* is nothing more than the fact that their construction, management and rehabilitation require expertise and expert knowledge.

Indeed, in modern industrialised societies sewerage is of the responsibility of experts embodied on specific organisations, to who belongs the responsibility of management of infrastructures jointly with the delivery of a service to communities.

Citizens are, in this context, fundamentally users of sewerage system. They ignore how it works, but use it in a compulsory, non-reflexive and unquestioned way. Such daily use is founded on a kind of faith on those systems’ well functioning, which in turn elapses from the belief on the trustworthiness of expertise involved on it. Besides, it also elapses from the daily confirmation, through experience, of its good-functioning.

Notwithstanding the huge and unprecedented changes it provoked, modern sewerage had the effect of withdrawing individuals from its core management. As far as it is possible to infer, the common citizen is fundamentally a passive user of sewer network. The centrality of such system to his quality of life co-exists with the compulsory and unquestioned way he deals with it.

Common citizen is also fundamentally a *reactive user*. His general passiveness is mainly interrupted when something unusual happens, such as a sewer failure.

The above-mentioned unquestioned way of using it is certainly at the basis of such reactive behavioural tendency. Nevertheless, we should not despise the fact that the achievement of a high standard of sewerage technical performance induced on high expectancies about its (well)-

functioning. Non-usual events, such as sewer failures, frustrate such high expectancies and more easily become unacceptable events on the part of individuals.

Individuals' attitudes towards waste and sewerage influence its state and performance. Their behaviour can be preventive of a set of sewer malfunctions, or not. But, it is in face of the challenge of sewer rehabilitation that citizens' engagement emerges as increasingly fundamental.

As known, most European cities face problems of sewerage and storm water systems wearing out, due to a combination of **ageing infrastructure** and **increased urbanization**. Its rehabilitation urges. This will, in turn, imply huge investments of governments as well as an increased effort of citizens, as taxpayers and sewer system users.

The above-mentioned endeavour is as much difficult as more distant and indifferent are individuals towards sewerage governance and their centrality to social quality of life.

Another challenge concerns water re-use. The introduction and expansion of water re-use technologies will certainly imply to have citizens and users as one stakeholder, among others. Such technological change is also a behavioural one. Given this, it will be probably more difficult to achieve it on a social environment marked by public unawareness in what concerns to water scarceness problem and the need of an efficient use of water.

What we call as *user re-convoking strategy* can, in practice, be achieved through a proper user policy, on the part of sewerage utilities. This implies to take seriously into account the fact that such organizations are fundamentally providers of a service to community². Consequently, their relationship with users, in the condition of customers, should be envisaged as one crucial feature of quality of service.

Globally, customer policy should privilege two distinct, but inter-related, types of approaches. We refer, on the one hand, to a more general one concerned with public awareness around environment issues and, on the other hand, to a more focused approach, concerned with the management of critical situations, such as failures or rehabilitation works.

The first type of approach is, at some extent, voluntary and requires a specific *organizational culture*. We refer, more specifically, to the vision of sewerage service as an organization that, concomitantly with the responsibility of sewer network management, has social responsibilities. These ones may be rendered concrete through sewerage utility involvement on local projects of public sensitisation about environmental issues, more specifically in what concerns to water and wastewater area.

² Sometimes, users occupy a subaltern place on such organizations' policy and management. "*Hard engineering*" tasks tend to fill utilities daily routines and planning, shadowing their duties as service providers.

The second type of approach is a crucial one to any type of sewerage utility that aspires to achieve quality of service. Although non-reflexive on the way they deal with sewerage, users have generally high expectancies towards sewerage and water services. Sewer failures and, at some extent, rehab works can, if not suitably managed, become on a source of frustration and public unacceptability, on the part of users. Apart from eventual impacts on individuals' quality of life, such critical events contribute to withdraw citizens from the system. Such type of scenario doesn't favour, as already mentioned, public enrolment on impending challenges, namely the sewer rehabilitation one.

2. GENERAL FRAMEWORK FOR A CUSTOMER POLICY

Since the beginning of the 1990s, local public services operators in both the public and private sectors have been paying greater attention to user “satisfaction” and “demands”. This project, which is both political and management oriented, is particularly concerned with the drinking water supply and sanitation services³. In itself, the “issue of user” is not a new one. One of the first ever manifestations of this issue was expressed in the legal language of the rights likely to be granted to users, particularly the equality of treatment and the continuity of the service providing (Chevallier, 1999). Then engineering language took over. Indeed, when post-war emergencies had passed, engineers became preoccupied with identifying and quantifying user requirements. It was a question of turning these requirements into a variable that could be controlled and coded by technical norms, in the development of a standardised equipment offer with which users were subsequently invited to comply (Jeannot, 1998). Change emerged during the 1980s and was confirmed and expanded during the following decade. The language of service marketing was introduced. It attempted to reconcile the techno-economic and legal constraints of services production with increased consideration of user profiles. Users were granted a certain number of consumer requirements. Thus, a new model of public administration was gradually implemented. Such model intended to be driven by three main principles: quality of service ; proximity towards customers ; evaluation.

2.1 Quality of service as the driving force

Stainer et al. (1998) envisages quality as one of the main drivers of any public service, around which its operational and strategic goals should be settled.

Quality is allied to the productivity of a certain service and simultaneously to customer requirements, needs and degree of satisfaction. As far as it concerns to public sector, productivity refers to relationship between the output of a process and one or more inputs (i.e. capital, labour and materials), used to create that output. Customers' degree satisfaction is, in this context, viewed as one important output, among others, and consequently a requisite of

³ See for example the AFNOR Quality Norm, published in June 2000: NF P 15-900-1 – Local public services – Guidelines for service activities in the field of water supply and sanitation – Part 1: provision of services to users. For a detailed analysis of conditions for the implementation of a quality approach in a sanitation department, see (Waechter, 2003).

quality. In this sense quality of service consists of “bringing the customer back into the organization” (Lorino, 1995). In this way, the customer becomes the connecting link between all the activities, so that the organization is de-isolated.

If we now put ourselves in the position of the user-customer, the quality approach first manifests itself through quantified service commitments. From this point of view, users’ demands of the sanitation service must for example be dealt with within a given time scale, which starts when a letter or telephone call is received... These performance commitments are clearly in keeping with the “service model” (Gadrey et Zarifian, 2002) as it is developing in numerous business sectors in France, especially following the first initiatives taken by EDF (*Electricité de France*) in 1994. At the Nantes Métropole sanitation department, performance objectives were first defined internally, using what Max Weber called “service knowledge”, derived from the customer relations experience of the contact officers⁴. They were then readjusted according to the user’s direct point of view, as it is revealed by the use of study techniques such as surveys.

2.2 Proximity: a way of valuing customers

Alongside quality, proximity seems to be the second main point to concentrate on in order to meet the public’s expectations. This principle is manifested by the implementation of new service constituencies: the proximity centres in charge of dealing with daily problems. In Nantes, one or two sanitation officers were transferred to each of the centres; these officers work in the proximity department but report to the sanitation department. Within this organizational framework, malfunctions experienced by users, for example due to a network failure caused by the obstruction of a portion of public sewer, could potentially be dealt with either by the sanitation department or by one of the proximity centres. To offset competency problems relating to these organizational complications, functional sectors have now been added to the regional sectors: the proximity centres are in charge of working on the “secondary” sanitation network, while work on the “structuring” network is dealt with by the central sanitation department.

In practise, from the users’ point of view, proximity leads to channelling their enquiries to a supposedly smaller number of “access points”. Paradoxically, this can prolong processing of part of the requests: for example, whatever their subject, all written complaints must be addressed to the President of Nantes Métropole, to be subsequently dealt with by a central

⁴ We use the concept of contact officer to designate staff that manage the face-to-face relationship with the public, whether it be direct (physical or telephone contact...) or indirect (mail...). Contact officers are generally middle-level executives and non-executives. Upper-level executives may also, nevertheless, from time to time work in this capacity, especially when they are involved in managing conflictual situations.

department, filed according to a certain number of criteria, distributed to the appropriate technical departments and even, for complaints considered “sensitive”, followed up by the central department. It is through the optimisation of inter-departmental coordination that this processing chain is supposed to produce shorter time scales for dealing with requests, despite its actual length. The proximity requirement also reconfigures methods of managing telephone calls. For daily problems, users are expected to spontaneously contact the proximity centre in their district.

2.3 Evaluation: the importance of review services performance

To evaluate is to provide a certain service of a mechanism of periodical review of its own performance. Sumanth (in Stainer et al., 1998) envisages evaluation as part of a continuum, which he names as control or management cycle. This one is, in turn, composed by four components, as follows: measurement, evaluation, planning and improvement (MEPI).

An evaluation procedure implies the construction of a performance criteria framework, able to be object of some kind of measurement. The content of such framework varies according the type of utility. Nevertheless, in the case of utilities that are fundamentally providers of a service to the population, their view about utility’s performance can be an important tool of reflection, decision-making and change.

The above-mentioned cycle as implicit the idea of service improvement through evaluation. Indeed, this should be one of this procedure’ main goals.

As far as it concerns to sanitation utilities and critical events, these can and should be object of periodical evaluation, for further improvement. Nevertheless, the vision of such events as an opportunity of “doing better” is sometimes shadowed by the fear of them to question utility and staff competence. When such barrier is surpassed, review of the way sewer failures and claims were managed can become a lever to improve accessibility towards services, quality of problem-solving and response to customers.

3. MANAGING RELATION WITH THE PUBLIC IN FACE OF **CRITICAL EVENTS**

As mentioned elsewhere, sewer failures and rehabilitation works are, under present research, envisaged as two types of sewerage related *critical events*. At the basis of this is the assumption that such type of situations is potentially disruptive at two levels: individuals' quality of life and relation between users and sewerage utility, based on *trust*.

Nevertheless, although both *critical events*, sewer failures and rehabilitation works differ from each other and guard their own specificities, which should, in turn, be taken into account when defining a policy of relation with the public.

One of the main differences between sewer failures and sewer rehab works concerns the possibility of anticipation of both occurrence and impacts, in time and space. Sewer failures are events more disposed to sudden or unexpected occurrences (or, for some of them, to repeated events). In the case of rehab works, almost everything can be planned and anticipated.

The suddenness of some failures, jointly with their potential of disruption, makes *access points*⁵ crucial moments. They have the crucial role of transmitting sense of trustworthiness on the ability of services to solve the problem in a reasonable period of time, with professionalism and attentiveness towards the customer. As shall be seen bellow, we propose that, in case of failures, interaction with the public should follow a strategy that would privilege **accessibility** to sewerage utility, **commitment** on solving customer's problem and delivery of proper **explanation**.

In what concerns to rehab works, the first effort should be the one of anticipating potential impacts and limiting them through proper planning. Then, the interaction with the public, at the *access points*, assumes importance. Such interaction is an important way of mitigating eventual impacts of works related problems, of transmitting sense of professionalism and avoiding loss of public credibility or *trust* on sewerage services. As shall be seen bellow, we propose that, in case of works, interaction with the public should follow a strategy that would privilege the **meeting** with the population before works start, **pamphlet delivery** procedure, joined with a process of **mediation** along works occurrence, between who is responsible for rehab works and the population living in target-sites.

⁵ By *access points* we mean the time and place were sewerage service experts or delegates and customers interact with each other, in order to solve unusual or critical or critical events or situations. For a more detailed knowledge see D14 Report (WP5).

In the following sections, we will privilege a more detailed presentation of what we envisage as being the *best practices* framework for interaction with the public, for each type of *critical event*. This proposal of *best practices* should be viewed as a general approach to the issue, which aim is to help sewerage utilities to define their own strategy.

Furthermore, it is worth to mention that empirical knowledge achieved along Task 5.2 served, in great part, as a basis for the construction of our proposal. Given this, it was chosen to contextualize the *best practices* framework by attaching a brief synthesis of main impacts of both failures and rehab works.

3.1 Sewer failures

3.1.1 Main impacts and general patterns of acceptability

Failures' effects

Amadora-Oeiras: external and internal sewer flooding, WC overtopping and a residual number of bad odors problems.

Nantes Metropolis: difficulties of wastewater evacuation and bad odors problems.

Impacts on quality of life⁶

Amadora-Oeiras: Almost every victim of sewer failures stated to have suffered from some kind of negative consequence. Approximately half of the victims felt such consequences as disturbing to their own quality of life. Nearby surroundings and housing/workplace appear as the areas where more individuals evaluate impacts as disturbing. Temporary impossibility of using public space, jointly with material damages to house or workspace and related discomfort is, in short, what founds such felt disturbance.

Nantes metropolis: Experience of sewer failures induced on impacts to the majority of individuals. Nevertheless, they were felt as being of minor significance. An exception may be found concerning quality of life in housing area, where around 40% assess felt impacts as having been disturbing to them.

Impacts on *trust*

Amadora-Oeiras: contact with sewerage services, in the sequence of a sewer failure, induced on *trust* erosion or distrust perpetuation. By *trust* we mean loss of credibility on sewerage services capability of managing sewer problems in an efficient way.

⁶ It is hypothesised that impacts may be felt on five areas of quality of life, namely health, safety, housing, work and physical environment (see D14 Report for more detailed knowledge).

Nantes metropolis: contact with sewerage services, following experience of failures, didn't induce on significant breaches on individuals' trust or belief on sewerage services' capability of dealing with problems of this nature.

Acceptability

Amadora-Oeiras: sewer failures are fundamentally viewed as unacceptable events, which cannot happen and should be definitely avoided.

Nantes Metropolis: In spite of globally felt as little disturbing, Nantes interviewees also perceive sewer failures as hardly bearable events, which should be definitely avoided.

3.2.2 Best practices framework

Three parameters emerge as central to a policy of relation with the customer, in case of sewer failures, as follows: **accessibility**, **commitment** on solving customer' problem and **explanation** to the customer.

Accessibility

This parameter concerns the way of approaching the sewerage utility in case of need. Such way should, in short, be an easy one, diverse and previously known by customers.

Easiness of contact implies the assurance of two requisites. We refer, on the one hand, to the existence of a direct and fluid channel of communication with the public and, on the other, to the guarantee that the customer contacts, at first place, with the right person or department.

By diversity, we mean the assurance of several ways of entering on contact with the utility. These ones range from the more traditional ways (such as telephone, mail letter or personal visit) to the use of new technologies of information, the Internet.

Fieldwork revealed that sometimes customers, when faced with a sewer failure or other type of sewer problem, ignore to whom to turn to. One of the most immediate consequences of such situation is the length of time the issue lasts until its handling or solution. The contact with wrong persons, services or departments, before the right ones, is time consuming and exhausts customers' patience.

Given this, the guarantee of previous knowledge, on the part of customers, of how to ask for support, or to claim in case of need, appears as fundamental. Previous information can be disseminated through several methods, namely through billing (back of the bill), through pamphlets (sent in an annex to billing or distributed to customers when they visit the utility) or even through the Internet. Besides, experience of failures is also an opportunity to inform customers about the procedures they must follow on future situations.

Commitment

By commitment, we mean the guarantee of failure resolution in a reasonable time.

This parameter assumes particularly relevance, not only because a delay of intervention can worsen impacts of sewer failure on individuals' quality of life, but also because it can open a breach on individuals' trust on sewerage utility. As we have seen before, survey' results showed that public perception of services as inefficient was mainly justified with their apparent incapacity of solving the problem.

As concerns to failure resolution, the ideal scenario is to solve the problem in a definitive way. Failure re-occurrence is particularly critical for utility's credibility as well as for the customer quality of life.

Nevertheless, fieldwork also revealed that some failures turn on a real challenge for the utilities. This was especially evident on some cases of bad odor at Nantes case study. The underlying failure of such sewer effect was not immediately evident for operational staff or implied a more structural and time-consuming solution. On the user side, such type of situation tends to generate impatience and misunderstanding about reasons underlying the delay of problem solving. The only way mitigating such adverse is through the guarantee of proper communication with the customer. Here, it appears as fundamental to assure a full explanation of the problem to the customer and, if necessary, to negotiate with him a time scale to problem resolution.

Explanation

This parameter concerns the importance of guaranteeing, whatever the type of failure and its difficulty of solving, an explanation or response to customers asking for support or claiming. Such explanation implies the delivery of information, in a friendly language, about what happened, why it happened and how the utility solved or intends to solve the problem (OFWAT, 2001).

Concerning this parameter, fieldwork revealed that sometimes customers don't receive any type of answer to their claim. And, when receiving, the procedure is only to inform that problem is solved⁷.

The guarantee of a proper explanation to customers constitutes, in our view, a way of bringing the customers inside the system. Apart from the effect it has on preventing customers' trust erosion towards the utility, the delivery of an explanation may turn into a way of transforming customers into more aware users. Besides, such requisite can, sometimes, become an

⁷ See D13 Report, section 5 and Annex 2.

opportunity to inform customers about the most proper way of dealing with sewer network and avoid behaviours that can favour the occurrence of a sewer problem.

3.2 Sewer rehabilitation works

3.2.1 Main impact and general pattern of acceptability

Disturbances

Amadora-Oeiras: car accessibility and parking, dust and dirtyness, noise problems

Nantes Metropolis: noise, traffic and parking problems

Impacts:

Amadora-Oeiras : Experience of public sewerage works near individuals home or workplace doesn't seem to have induced on great consequences to their living. An exception may be found at 'surroundings' dimension : in fact, there is a non-negligible amount of individuals (30%) that view public space temporary use impediments as having been highly significant to their own lives.

Nantes Metropolis : For each dimension of the quality of life, there is a majority of subjects who stated having felt no significant or little significant impacts. Dimensions "housing / work place" and "surroundings" are the most impacted dimensions, compared to "health" and "finances / work".

Acceptability

Amadora-Oeiras : rehab subjects tend to view rehab works as normal temporary situations, which it is necessary to cope with.

Nantes Metropolis : almost every interviewee classifies works' impacts as "something that happens" or as something "unpleasant", but which individuals must cope with. In the case of works, individuals anticipate some kind of benefit, for them and/or for the community.

Expectancies as concerns service quality :

Amadora-Oeiras : efficacy, speed on problem solving and to a lesser extent easyness of contact are highly valued by all subjects, victims either of failures or of works ; noteworthy is the fact that rehab victims tend to attach more importance than others to satisfactory explanation.

Nantes Metropolis : the majority of Nantes interviewees (whatever the critical event in question) expect the service to be efficient, quick on solving problems and easy to access.

Aspects to be taken into account in case of works :

Amadora-Oeiras : individuals want public works to last as little as possible, not to constrain pedestrian or car accessibilities and, for at least some of them, the assurance of good public information.

Nantes Metropolis : individuals would appreciate a planning of works aiming at minimizing bad consequences (e.g. : avoiding sales period in a shopping street) and efforts to minimize noise.

Perceived critical practices :

On a more qualitative level, focus group sessions and survey allowed us to highlight practices suitable to undermine confidence and/or provoke irritability :

- public works too long duration, especially when accompanied by recurrent actions of trench re-opening ;
- open trenches without any type protection, inducing on risk of falls and injury for residents;
- works poorly signalized and occurring, for several times, out of officially allowed hours/days;
- incivility and rudeness of workers;
- lack of public information;
- delay on pavement reposition and public space re-gardening.

3.2.2 Best practices framework

Three channels of communication with the public can be enhanced : meeting ; pamphlet delivery ; mediation by a contact officer. Each of these channels may contribute specifically to a good communication with the public before and during the works :

- pamphlets can be used to deliver basic information awaited by the public ;
- information meeting is an opportunity to establish a direct contact and dialogue with users and to listen to their possible specific concern ;
- a mediator can do a monitoring of the works, aiming at solving unexpected problems and at avoiding critical practices (see above).

Rather than telling the “truth” about what are or should be the best practices, it’s possible to identify the main questions raised by the use of these different channels, and to give some possible answers. All suggestions have also to be adapted to the importance and duration of the work and to the technology used and to the recent history of works in the area.

Pamphlets delivery

Which information should they contain? According to data gathered during the fieldwork, users have increasing demands as concerns information. Pamphlet should at least contain the following information :

- Planning : date of start and estimated duration
- Nature and benefits of the works ; it's both possible and useful to emphasis simultaneously on benefits for the users and for the environment ;
- Possible consequences: traffic and parking problems; access to house / shop; odours problems; WC interruption... ;
- Whom to contact in case of question / problem (phone number)

When are they to be delivered? If they are delivered too long before work starts, one can suppose that the information will be then partially forgotten ; on the contrary, if they are delivered too little time before the beginning, people could have the feeling they have been taken by surprise : "one warns us at the last time". Operators have to aim at the happy medium...

What should be their qualities?

- Attractiveness: pamphlets must catch the eye so as to be isolated from advertising...
- Simplicity: it's important to avoid technical terms and to allow the reader to get the basic information quickly.

Meeting before works starting

Should they be systematic? The answer is probably : no. It depends in fact on parameters such as : the nature of works, their duration, the place where they will take place... For example, in Nantes Metropolis, meetings seem to be held systematically concerning extension works, probably because they are likely to involve extra costs for users, and because users may have specific demands/queries to raise (e.g. the depth and position of the connection). These meetings also seem to be relatively systematic for rehabilitation work carried out in the Nantes urban area, at least for projects that are likely to be very lengthy and/or that concern especially busy shopping streets and/or that concern streets where several works have already been done...

It's worth mentioning that in Nantes, without being directly to blame, proximity has thus confirmed, if not strengthened, the subsidiarity principle that regulates user relations policies during works (communication, concertation...): each commune, and more specifically each mayor, retains control of all concertation. This gives rise to heterogeneous practices (systematic meetings in one commune but not in another...) that are likely to be incomprehensible, and

possibly contrary to the demand for quality of treatment, which remains highly important to public service users.

Should they be open to anybody or dedicated to a specific group? Retailers may have specific concern and questions, and will probably appreciate to have the opportunity to put them on the table with representatives of the city.

What should be their objective: one-way information or mutual information? A meeting is always the opportunity for the network operator to explain the motivation underlying works, to deliver once again information awaited by inhabitants, to let people express their fears (access to the house / shop ; traffic perturbation ; use of WC) and to cope with them. But operators must bear in mind that meetings may be also opportunities to get information about specific local constraints or requirements that could not have been previously identified and then taken into account. For example in Nantes, inhabitants living in big buildings were annoyed about the works because these works took place in summer and due to them children on holiday had no more access to the small pool where they were accustomed to playing. One can imagine that a meeting could have been the opportunity to raise the problem and to look for a solution. Lastly, one can expect that people will speak about other problems related to their district, even if not directly connected to the works.

Who will attend the meeting? Participation is likely to be very variable from one meeting to another, according to the very nature of planned works, the local history as concerns road works, the type of urbanism, the presence of a NGO... Let us mention that although the public meetings organised by the district teams and the local representatives are based on tried and tested methods, they are nevertheless invariably confronted with the classic paradox of participation: the tendency among those concerned not to attend, even though they have asked to be informed and even though they usually consider the lack of such public meetings to be an unacceptable shortcoming on the part of local government. Another key issue to bear in mind is the following : people or groups who attend such meetings are not necessarily those who may suffer most from of the works. Social barriers may hinder people from attending such meetings, e.g. difficulties to speak in public. It's the responsibility of the operator to be aware of such problems.

Mediation

What for? It's a well-known fact that generally speaking action is always a source of surprises and of unexpected events. Even when works have been carefully prepared, things may turn wrong: for example, a company may have difficulties to respect schedules or security instructions, and people may get dissatisfied about the possible consequences of this behaviour. It's probable that some of these problems can be solved without a specific intervention from the operator, but according to the experience of Nantes Metropole, a mediator may intervene for example to check out that companies do respect their schedule or to help

people managing their access / exit problems... More generally, a contact officer can help creating a “good atmosphere” between all stakeholders.

Who? One can imagine two different organizational schemes. On the one hand, the contact officer may belong to the sanitation department: if this is the case, mediation is one among the different tasks that are attributed to a member of the technical staff. On the other hand, the municipality may have developed a proximity policy, within the framework of which mediation will take place. For example, within the framework of its own proximity policy, the city of Nantes in fact implemented “district teams” quite some time ago. The district team staff plays the dual role of surveying and “repairing” the various degrees of tension that the works invariably generate.

More mediators? One crucial point to bear in mind is that local residents tend to question and interact directly with every accessible staff member, whatever his real status and role in the works. All things considered, from the resident’s point of view, anyone being present on the workplace is more or less a representative of the municipality and thus is likely to be viewed as a possible source of information. Therefore basic information about the works (why? how long?...) should be delivered to anybody likely to be in contact with residents.

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