



Sound Exposure & Risk Assessment of Wireless Network Devices

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Syntheses of WP10 (Risk governance, integrating assessment, perception and communication)

Focus groups

Dialogik conducted eight focus groups¹ – 4 in Switzerland and 4 in Greece – to gather insights about concerns, risks and benefits of wireless network devices, criteria for risk communication, type, channel and frequency of information that people wish to receive about wireless network devices and about the required technological infrastructure, the self-reported behavior in connection with this technology, the perception of resilience/flexibility with respect to new information as well as public expectations towards regulatory needs by political authorities. In total about 90 persons attended the focus groups in Switzerland and Greece respectively.

The focus groups in Switzerland and Greece revealed five user types with respect to the evaluation of sources, channels and request for information:

- **Skeptical User:** They are skeptical about this technology and distrust official information about risks and benefits. They associate health risks with these devices and are convinced that the use of wireless network devices or EMF radiation would lead to health damage.

¹ A focus group is a moderated and structured process of debate among 6 to 15 participants, representing a social group or a relevant selection of stakeholders. It is designed to aim at exploring the social resonance of pro- and contra- arguments in given controversies or value-conflicts, to better understand patterns of perception and potential concern and to anticipate demands of communication and information.

- **“Convinced” Frequent and Pragmatic Careless User:** They are convinced of high utility and associate very low health risks with wireless network devices (“The more I use it, the less I want to know about it”).
- **„Interested“ Frequent:** They want to know about the possible health risks of wireless network devices (“The more I use it, the more I want to know what it does to me”) but they believe it is their responsibility to obtain information
- **Adaptive User:** They are prepared to take precaution where necessary (prudent avoidance) and they adapt their user behavior to the information they can get. They also believe it is their responsibility to obtain information.
- **Low-tech Non Frequent and Non-User:** Their request for information is limited to passive protection or protection of others, i.e. children. They show little risk awareness.

The focus groups also produced basic recommendations for an integrated communication policy:

- **Preference for a centralized information source** integrating different independent (scientific) sources and channels and “authorized” by a trustworthy central institution (such as the European Union).
- **Role of provider:** The provider should be obliged to give reliable information about potential health risks and recommended precautionary measures. Information by the provider constitutes only one element of an integrated communication policy.
- **Role of science:** Political decision makers are encouraged to initiate a set of international and long term – studies on the issue. The respondents judged independent international studies by scientists as the most reliable source. This was true for all types of users. Studies should be written or translated into everyday language that laypersons can understand. They should also be available on the page of each EU member country.
- **Placing information in context:** Risk comparisons with familiar risk situations (f.e. smoking, use of mobile phones) is appreciated.
- Communication should address the **different types of users** mentioned above. The message should be targeted to the needs of each of the user groups (by modifying message framing, channel, frequency, information type, language).
- The **range of communication demands** varies between a) providing full information on technology, spatial diffusion, exposure health effects, exposure, array of protective actions, including precautionary measures, public policies and standards and b) limited communication on health effects or only if there is a strong indication for health risks (supported by the pragmatic careless feeling unable to change habits unless there are severe reasons to change).
- One of the most consensual aspects of a communication strategy was the **integration of health information** into a single format, including physical risks, psychological online-addiction, data security, social exposure, pressure, social fragmentation, control of children’s internet use, etc.)

The participants also expressed some demands and concrete political recommendations:

- Encouraging/obliging providers not only to inform about risks but to reduce exposure.

- Information on risks associated with wireless network devices (health as well as other) as part of the school curriculum (similar to traffic safety information).
- Summarizing the best knowledge available in forms of a leaflet, a script and YouTube video provided by the EU commission.
- New devices: EMF-measurement tools (i.e. exposure calculators) should be available in public places such as schools and online.
- Common network: One region should have one single wireless network instead of a variety of overlapping signals.
- Designing urban risk maps: location of telephone antennas, high voltage power lines, radio amplifiers information brochures and on the web.

A web-tool was also created by IBBT for the prediction of indoor exposure. This tool was presented to the participants of the focus groups.

Group-Delphi and the key results

A Delphi is a dialogue process where experts use a standardized questionnaire to submit their assessments and reviews about a specific topic. A Delphi can be conducted in form of repeated written survey or as a one- or two-day workshop. In this so-called Group-Delphi the experts respond to a standardized questionnaire in rotating small groups and discuss the differences between the groups in plenary sessions. The aim is to identify consensus or substantiated dissent on each relevant topic. Either the discussion reveals that all experts share the same opinion or judgment, but that they agree to disagree for good reasons.

The objective of the SEAWIND Group-Delphi was to develop a most suitable strategy to communicate the IARC 2b classification of agents (c.f. International Agency of Research on Cancer (IARC) 2012). The Group-Delphi was also designed to develop approaches on how to communicate uncertainties to lay audiences.

The Group-Delphi questionnaire consisted of questions with a special focus on:

1. Who should inform the public about the risk classification?
Broad consensus between the experts, that public authorities, health related organizations and scientists, and consumer associations to be the most relevant communicators.
2. Who should cooperate?
Broad consensus in the first round that the national agencies and scientists should cooperate. In the second round the experts argued that the national agencies and scientists should be complemented by a tandem of scientists and journalists to assure that expert information is presented in an understandable and comprehensible way.
3. What should be the content?
There was a consensus about the need for recommendations how to avoid risks/benefits.
4. What are the objectives of the communication?
There was a consensus about the need of transparency in risk evaluation and risk

management. There was also a consensus among experts that it is not necessary to present only one position, but rather arguments for each side of the conflicting positions (strong emphasis on communicating uncertainties).

5. What are the most *effective* communication channels?
The most effective communication channels depend on the communication objective and target group. Possible communication channels could be websites, press conferences, scientific publications, TV and radio.
6. What are the most *credible* communication channels?
Consensus between the experts that the most credible communication channels are scientific publications and information given by the responsible authorities.
7. What supports risk awareness?
Risk awareness can be enhanced by apps and product labeling. Mobile measurement instruments were rejected inappropriate. More research is needed here.
8. Should uncertainty be communicated?
Not always, but consensus that uncertainties are important ingredients of risk communication. More discussion and research needed of how to communicate uncertainty. It is important to balance between the aim to give the right information to assist people in evaluating and assessing the risk by themselves and the potential to cause undue fear and create more damage by installing risk aversion which could lead to missed opportunities.

Potential impact

Communicating uncertainty faces the dilemma of finding the appropriate balance between undue precaution (rejecting a beneficial technology) and carelessness about risks (focusing on benefits only). The panelist recommended: Integrate information about health risks in a broader information context about social risks and benefits of WLAN, and mobile internet use in general, take advantage of different channels, vary the frequency with which information is given and experiment with different formats and frames in line with the needs and concerns of the various user typed identified above. The focus groups also recommended to establish a centralized structure for authorized independent information (f.e. by EU-institutions).

Furthermore, on the practical side, the EU was advised to produce YouTube videos on the issue and to consider establishing awareness programs at schools. This should be augmented by installing radiation measurement devices in computer rooms, to create exposure and risk maps about radiation exposure and to invest in a single common wireless network in order to minimize exposure to overlapping electromagnetic field radiation caused by a variety of parallel wireless networks.

Exploitation of results

The qualitative studies of WP 10 aimed at understanding perceptions, concerns of and information needs for wireless network devices and the corresponding technological infrastructure. The focus has been on two specific characteristics: a) the devices are frequently used by large parts of the population – and have effects even on those who do not use it actively – and b) it contains uncertainties about long term health risks.

This means an extraordinary challenge to political planning, to risk governance as well as to risk communication. The main strategic communication recommendation refers to integration of information from a unified, independent and credible source and the tailoring of information and communication programs towards the needs of the different user types. These recommendations exceed the context of SEAWIND technologies since the same communication problems apply also for various other technologies under the conditions of uncertainty such as nano particles, genetically modified organisms and others.

Risk awareness is a topic that many experts felt is underdeveloped among the general public. Some people overestimate the risks others underestimate the risks, and there is a lack of judgment for the appropriate balance of risks and benefits.

Throughout the Group-Delphi there were two opposing views about how and when uncertainties should be communicated: One group favored full disclosure of all information, including guidelines for preventive and comprehensive information while the other favored a more limited information approach filtering all information that could cause unnecessary fear and worry. It may depend on the situation to judge which of these two opposing strategies is more appropriate. ,

It is important to balance between causing undue worry and concern on one hand side and careless adoption of risks on the other side. Communication should be directed towards giving people the background information to judge for themselves how much protective action they would like to take.