

Peoplenet Against Poverty: A Concept Plan

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ABSTRACT

Modern information and communication technology (ICT) provides novel and powerful opportunities to assist poor people in helping themselves, privately as well as embedded in their communities. PeopleNet is a concept and plan for a virtual community service based open ICT principles. Its focus is on realizing underprivileged people's information rights, and its main goal is to provide and leverage the practical information poor citizens need to improve their living situations. This comprises any information topic, as long as it is deemed relevant by the poor themselves, including the domains of health, agriculture, social relations, and commerce. The assessed state from where PeopleNet is developed is such that we are globally increasingly well-equipped with technological means yet still relatively poor in terms of principles and practices for exploiting these means. There is a great need for design improvements and adaptation and PeopleNet aims at commencing such developmental work.

INTRODUCTION

Information is a fundamental resource in modern life and a key to wellbeing and the sustaining of a proper livelihood. For this reason, the United Nations (UN) declarations of human rights assert very clearly that all people have the right to access the information they need. Article 19 states: "Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers." Driven by the Millennium Development Goals 2015 (United Nations General Assembly, 2000), the UN, and especially the Office of the High Commissioner for Human Rights (OHCHR), has been very keen to develop and apply a human rights perspective to their broad initiatives on poverty reduction (e.g., Hunt, Osmani, & Nowak, 2002; OHCHR, 2004). This approach naturally spans many dimensions of poverty, of which we would foremost like to discuss those related to people's information needs. Indeed, as we see it, the problems underlying poverty often go hand in hand with the problems of realizing people's information rights (e.g., Ocholla, 1998). Therefore, a human rights approach to poverty reduction strategies must carefully assess the role of information and people's interaction with information and communication technologies (ICTs).

At the time the information right in Article 19 was first defined, the distribution system of information was very different from that of today. The main media sources of information were radio, newspapers, journals, and books. This means that information distribution was more centrally controlled and it was easy for governments to influence content or limit the free flow of information. This is why it is important that Article 19 also explicitly accredits people the right to freely seek and receive information.

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The information society of today affords a fresh appraisal of the basic rights formulated in Article 19. With sources of information becoming virtually unlimited, it has in principle become increasingly easy for most people to access information. From this follows the argument that modern information and communication tools and services present a major opportunity for realizing people's information rights. However, the growth of information supply, while not having eradicated the basic barriers to information access, has also accentuated other problems. One is the difficulty of finding personally relevant and reliable information, e.g., to discriminate information from disinformation. Another is the challenges involved in exploiting information through the construction of effective knowledge and application thereof. Hence, new technology makes great masses of information available for very large numbers of people. However, this does not necessarily mean that people are able to find and successfully utilize the information which would be most relevant for their lives, albeit its availability. There are many practical obstacles in the way. Before moving forward it is therefore good to reflect for a moment on the nature of human rights. Human rights are part of customary international law, and thus of legal norms that have found their way into many national constitutions. However, safeguarding human rights as legal rights is not the same as ensuring human rights as practical rights. And, equally, a failure in the latter does not result in a violation of the former. This has important implications for the human rights approach to poverty reduction.

From the right to some piece of information, it does not automatically follow that a person can actually acquire this information. One must know what to seek, have tools to get it, skills to retrieve that piece of information, and the ability to understand what this piece of information means. Finally, one must also have the possibility to use this piece of information for one's benefit. Only when these secondary obstacles have been overcome can we really think that the spirit of this particular human right has been met for the good of humanity. Indeed, we have to make a difference between legal (nominal) and practical (real) human rights. The legal human right to seek and receive information is a necessary yet often insufficient condition for the realization of the real human right to access accurate information at the time of need. Furthermore, we have to distinguish received information from effectively applicable knowledge. Again, access to apt information is a necessary yet often insufficient condition for the facilitation of proper understanding.

HUMAN TECHNOLOGY APPROACH TO FURTHER HUMAN INFORMATION RIGHTS

When one works to solve the problems of human technology interaction, it is essential to inspect our current success in leveraging the potential of modern ICT tools and practices for furthering human rights. Despite - or even because of - the massive technological progress in recent decades, it remains difficult to appraise ICT's social impact, particularly with regard to poverty. Phenomena such as those related to the digital divide even suggest that hope for improving real human rights in the world by means of modern technology has become jeopardized. Therefore, serious and theoretically well-founded actions are pivotal.

In this paper, we discuss on a conceptual level how we can advance the reduction of poverty by means of new ICT principles and practices. There are many other important problems related to human rights in developing new technology, but poverty is undoubtedly one of the most major ones.

Our main focus concerns the description of a particular model for information technology to assist or even propel initiatives to reduce poverty. This means that it formulates a conceptual model for such a service, one poor people could use to access information they can use to improve their situations. The model is anchored in the comprehensive (social) psychological assessment of human dimensions of ICT design and use: the human technology

approach. At the same time, the proposed model also discusses many obstacles for that kind of plan and suggests ways to deal with them.

WHAT IS POVERTY?

People's lives, including their experiences and actions, are structured around a core of living needs and aspirations. Poverty is antagonistic to the satisfaction of these needs and aspirations, with accordant depriving effects on people's experiences and actions. More concretely, it refers to a deficit or inaptness of resources necessary to (a) cope with hazards or solve problems in general; or (b) emancipate and self-actualize oneself. The former problematic displays poverty as a hurdle or barrier in people's lives, while the latter reflects the inherent lack of agency and empowerment with poor people and communities.

In our conception of poverty, information - and therefore problem-solving and emancipation-relevant knowledge - plays a key role in poverty alleviation. Two important sources of poverty, and the manifold limitations it imposes on peoples' livelihoods, are ignorance and the inability to attain relevant information, as well as an inability to make informed use of this information so as to improve life circumstances.

By the same token, it is also important to realize that poverty cannot simply be conceptualized as a negative image of a lifestyle. This does not provide us with an appropriate understanding of how poor people deal with their incumbent situation. Poverty is not simply a deprivation of a normal living status, but an extraordinary way of going about daily life tasks with the use of restricted or inappropriate resources. Therefore, a model for a reduction of poverty cannot be primarily motivated from the perspective of people whose information rights have been realized. Rather, it must grow from and with the information infrastructure, habits, and customs poor people face today. For instance, one cannot determine what services people really need and how these can be provided through ICT without understanding how people once satisfied those needs, or previously provided themselves with such services.

Hence, the many faces of poverty, and their origins and effects in terms of core psychological dimensions (e.g., Carr & Sloan, 2003), must first be illuminated. Obviously, from a human psychological perspective, the basic needs of poor people cannot be much different from those of anybody else. But the urgency or priority of needs may differ markedly, caused by specific deprivation of services or by developmental objectives.

WHAT IS PEOPLENET?

Modern ICT allows for the development of efficient services for the use of all people. It further allows for broad community-type networking among people, through which a connection can be established between people in need and people willing to aid. PeopleNet is a community information service designed for building information distribution between people who want to help others and people who need that information. The core of the developmental work of PeopleNet consists of understanding the ecology of poverty, delineating and developing the services, creating feasible interaction paradigms, and finally managing its adoption and the risks involved in this. Concretely, PeopleNet shall create and provide "how-to" information, of the kind poor people can use in improving their life situations. The service is also designed to grow with input from users themselves, e.g., it provides answers to practical questions, supporting their problem-solving efforts. PeopleNet thus minimizes problems caused by ignorance.

The contents and working models of PeopleNet are user driven, and thus do not impose any pre-defined limitation to help topics or presented issues. They may concern economic, medical, human relations, agricultural, or personal issues. The only criteria would be that the knowledge is relevant and practically valuable.

This kind of service must be easily used and directed towards practical knowledge. An example of such is provided by Wiki-type information systems, which give information for specific questions. Of course, it is essential that the interfaces are as simple to use as possible. In addition to written media forms it is essential, for example, to develop podcasting and voice based systems.

Today, different image-based information sources are well developed. It is possible to show people how something can be done - what kind of tools are needed, and how they should be used. This kind of information is easy to adopt and easy to remember, i.e., it can be used to swiftly modify practices.

The core of the PeopleNet model is formed by a comprehensive question-answering type information service, in which one can find practical advice for practical problems of daily living. The main problem in developing such information systems is to define adequate questions and fitting answers to these questions. This is a great challenge. Therefore, we have to carefully investigate the nature of implementation systems, the nature of required information, and the type of interaction design that is warranted.

ETHICAL INTERACTION DESIGN

One may wonder whether there is any readily applicable ICT-design tradition. Common human-computer interaction design focuses mainly on problems of usability, i.e., how people are able and willing to use devices. Obviously, this forms part of the work in designing the PeopleNet service framework. However, it is not a well-suited tradition for discussing the service as a whole.

Indeed, contemporary human technology interaction research does not concentrate only on solving general usability problems. It often also investigates possibilities for using new technologies for definite purposes. One can call this type of work concept design, as it is commonly seen in engineering design science (Bowen, 2009).

Concept design means that we analyze the overall structure of the problem to be solved and then assess the usability of new technology. In this context, one can also speak about action-oriented design thinking. This means that we consider people's actions and how they organize them around new technologies.

There are, however, further design traditions relevant to PeopleNet. One new such direction is ethical design. This means that design decisions and solutions shall be backed by ethical arguments. Ethical design incorporates ethical discourse in designing technologies for human use. This means that social rules and norms, as well as general ethical principles, guide the design process and design discourse (Bynum & Rogerson, 2004). This type of design process consciously reflects ethical values, in the choice of design methodologies, practices and goals. It does not take technology as ethically neutral, rather emphasizing its ethical dimension in consumption and use. Because modern ICT is very powerful in its social impact, its ethical issues are much more critical than they are with many older machine-based technologies. ICT involves social exchanges and information management, and it is imperative to take the principles of ethical design seriously in its development.

Human rights form one of the most important systems of ethical principles developed and used by mankind. As already mentioned, they legally surpass the constitutions of the countries bound to follow them. This is why it is justified to argue that human rights form a suitable system for ethical design.

Work against poverty, such as the goal aimed at by PeopleNet, is thus clearly representative of ethical ICT design. It should therefore be based on experiences described in ethical design research.

EMANCIPATION RELEVANT KNOWLEDGE

As we have stated, necessary preconditions for developing PeopleNet are an in-depth understanding of poverty and its related challenges, at both the individual and community level. Continuing from this, it is necessary to target the quality of needed resources and knowledge, the development of effective and accessible technologies, usable information systems, and finally, the development of effective use cultures. The key task of the present project is to develop a model for service development in an environment of poverty. It must give us answers about the kind of knowledge that is required, what the interaction technology should be like, and what the main catalysts and obstacles are in developing the use culture.

Knowledge which can aid a person to solve his or her practical problems and attain personal aims can be called emancipation-relevant knowledge (ERK). This knowledge touches any area of life. It can concern, for example, nutrition, healthcare, education, decent work, security, action guidance, legal knowledge, or personal relations. There is, of course, much more knowledge needed and we do not know at the moment all the kinds of knowledge required. Nevertheless, all such knowledge should be emancipation relevant.

Emancipation relevant knowledge is goal-oriented and action-based, as it can provide information to people about what they should do to get something they need. Examples of this include practical advice about what can be done to improve childcare. People could also be shown how they can use agricultural tools in the most effective manner. Today, people are often helpless even though they can solve their problems, just because they have no idea how they might do better, because they do not know that such advice is available, or even because they do not consciously know of their problem.

This means that ERK spans several purposes. It must help people appropriately appreciate their situation - to identify and comprehend their problems. It must capture their attention with regard to available information that may benefit them. And, finally, it must provide the necessary information.

OPEN ICT COMMUNITY

PeopleNet can not be created from nothing. It needs people for it to be built and maintained. The most natural organization for such a philanthropic service would be an open ICT community. Today much important work is being done on the Web on such a voluntary basis. A good example is the development of the LINUX operating system - a huge project made possible by a global Internet community.

Much technological design is done through the Internet. Even very complicated technical products are developed partly on an open source basis. One may doubt whether such work can be really professional. However, recent history shows that this way of developing large ideas into realistic form really works.

It is evident that there are many people who would decline to participate in this kind of voluntary work. Even today, voluntary community work is not as popular as it should be. However, there are still a large number of people who do much work to eliminate poverty on voluntary grounds. To these people, PeopleNet might provide a challenge and a forum to express themselves.

Even so, an open developer community building does not just happen. It is the result of focused, persistent, and highly diplomatic managerial work (e.g., Lovgren & Racer, 2000; Tilly, 1999; Wenger, 1998). Key constituents of successful community building efforts are a fertile initial developmental seed (e.g., a clear model or framework, a prototype),

clear and achievable purposes, frequent distribution of tangible results, and a functioning feedback system by which community identity and shared motives can be maintained.

Beyond the developer community, there are two main forums of stakeholders in PeopleNet that need to be addressed. First, convincing political organs and industry (e.g., product and service providers) of the benefits of community-built solutions is an intricate task. It demands attitude and culture change (e.g., Lewis, 1999; Stallman, 1998). And finally, users of PeopleNet need to be involved in order to cultivate a participative design culture, where the actual problems, questions, and actions of impoverished people can be utilized as project drivers.

MODERN ICT CULTURE

ICT tools and interaction platforms play a key role in PeopleNet, not only in the sense of being a developmental target for the project, but also with regard to facilitating such development. The Internet and web services have only begun to enter the lives of many poor communities around the world. However, most people in welfare states are part of a revolutionary change, in which much of their daily lives and activities are moving to e-environments. The Internet, and especially the Web as a universal platform, has become indispensable for computer mediated communication, social networking, and information and knowledge work in general. This phenomenon, often characterized as Web 2.0, takes form in the way we conduct business, spend leisure time, coordinate and converse with social others, carry out chores, and attend educational institutions. Basically, the Web has become the prime source for how we address daily challenges, how we entertain ourselves, and how we shape our values and attend to our ambitions. The use dimensions of mobility and ubiquity have only further accentuated this fact.

Thus the role of the Web and the effect of its use by more privileged people to date have certain parallels to what we mean by emancipation relevant knowledge - that which needs to be delivered to poor people. The problem is, however, that much of the current Web, its interaction paradigms and contents, has emerged from needs and practices that have little in common with those of highly disadvantaged people. This is not to say that the current Web is unusable, or its information contents irrelevant to the poor. However, most available popular services are ill-tailored to their living situations and problems. This problem comes on top of the more basic concern of technology access in general.

Because today's society is an increasingly technological one, the importance of access to new technologies, the usability of those technologies in a particular environment, and the importance of being involved in networks within this kind of society must not be underestimated. From the point of view of human rights, the law suggests that everyone has a right to development, which is a crucial individual and social right. The right to development in connection to technology was taken up in the 1992 UN Conference on Environment and Development (UNCED). In this conference, a non-binding program of global action for sustainable development was adopted (Agenda 21). It was also established that availability of technological information, and transfer of Environmentally Sound Technologies (EST), are essential for sustainable development in developing countries. Having access to technologies is crucial for an individual to recognize this right. But who is responsible to facilitate this?

Those groups which have been marginalized within the "Network Society" (Castell, 2001) are the same which were marginalized in earlier times. Access to networks and their services could enable these groups to strengthen their position within global society.

Therefore, ICT product-and-service providers have a fundamental role to play in the development of new strategies in the fight against social injustice. If we recognize that human rights are universal, interdependent and interrelated, we must admit the significant

role that ICT has played in furthering social and economic development. In order to accomplish the process of development, and the goal of bridging the gap between those parts of society who can or cannot participate in dynamics of "information capitalism" (Castell, 2001), there are responsibilities to be recognized - for natural persons, states and other political entities, but especially for ICT-service providers. Methodologies they use can be understood as a way of viewing social systems (Avison & Fitzgerald, 1995). When the impacts of different methodologies are evaluated, we are also dealing implicitly with the philosophical ideas informing each methodology. If we want to have ethically sensitive methodology, we have to pay attention both to the techniques that a certain methodology employs and to its philosophical ideas. When we are dealing with an issue like managing poverty by means of ICT, ethical considerations should be incorporated from the outset in ISD methodologies. They should also be incorporated into each of the development procedures, with disambiguation for specific development teams. It is not enough for methodologies to only prioritize organizational efficiency and productivity. They must integrate human values into design.

Participatory design (PD) is an approach attempting to actively involve the end users in design processes. This helps to ensure that the product meets with consumer needs and that the product is usable. The focus of this approach is on process. Participatory design also differs from other design approaches by including a political dimension of user democratisation (Kiloh, 1986). Still, one might see it as a way of shifting design responsibility away from designers. There is a possibility that as a result attention might be directed away from some important ethical issues.

INVOLVING THE POOR

Involving the actual users and beneficiaries of PeopleNet is still our fundamental concern, not only to prove its impact, but also to ensure the ecological validity of the model. Although problems related to the digital divide are not about to vanish anytime soon, many efforts and developmental achievements can be noted that undoubtedly support the hopes of PeopleNet.

First, there have been numerous initiatives to provide affordable hardware to disadvantaged communities, including ready-to-use and comprehensively equipped devices that are very durable, reliable, and highly mobile. Second, Web 2.0 stands for a new generation of tools and services that feature more mature technologies than those employed in the Web 1.0 era, and whose immanent focus is clearly on ease of use and enjoyability. This lowers the bar of benefit utilization, especially for less experienced users, and especially when interaction design prioritizes use intuitiveness. Finally, fashionable Web 2.0-type technologies such as social media software applications have great potential to catch on with disadvantaged people and to be exploited for their causes, as these technologies tap the very basic needs and motives of human beings.

One conceivable use problem, for instance, is the dramatically lower (functional) literacy rates in many poor communities. These people are less familiar with text-based information media, which puts some doubt on whether ICT open community services such as Wikipedia can have as dramatic impact on the information rights of the poor as they have had on the more privileged user community. Image-based model learning, for instance, enabled through video sharing forums such as YouTube may indeed prove more valuable and applicable. The same literacy-circumstance may also affect the choices of user interaction input techniques, these traditionally being the QWERTY-design alphanumeric keyboard and the mouse. Other forms of interaction input and output may be considered. Further, people from poor communities in developing countries may also be less receptive to the traditional single-user, personal computer use archetype, not primarily for economic reasons, but as much for cultural ones. Other more socially dynamic multi-user use scenarios may prove more valid, and actually be more effective, as this stimulates the exchange and

transfer of knowledge between a distributed and a local community. Recent years have also seen much progress in developing voice operated information systems. For illiterate people such systems could prove very valuable. Still, there are numerous problems to be solved before a use culture for such tools can be developed. However, we have more extant tools for developing PeopleNet than we perhaps might notice at first sight.

FINAL COMMENTS

Two important sources of poverty, and the related manifold limitations it imposes on peoples' livelihoods, are ignorance and inability to make use of possibilities for improving one's immediate life circumstances. Poor people do not have, know about, or effectively exploit services and means to solve their everyday problems. They are therefore deprived of their potential to improve their lives by means of their own efforts (cf. Sachs, 2005). Practical "how-to-dos" need to be offered, spanning various concerns: administration, agriculture education, health, etc.

In principle, the development of information and communication technology (ICT) holds many promises for providing effective means to uneducated people, so that they can acquire needed knowledge. However the digital divide has thrown up challenges against productive and sustainable ICT use with the poor. These problems are especially evident in the countryside and in emerging cities of developing nations. Considering the global magnitude and importance of the matter at hand, it is crucial to develop services for poor and uneducated people, empowering them to solve their practical everyday problems.

PeopleNet provides a promising instrument to assist poor people and give them the means to improve their standard of living by themselves. It addresses its aim by applying an innovative human technological perspective. It advances a new and more effective way for developing information system services aimed at empowering poor citizens. Complementary to other poverty reduction programs that concentrate on dimensions of globalization, politics, and economics, PeopleNet's focus is on human action-oriented, culturally sensitive, and ethically sound initiatives to further the value and impact of information technology. It is important that people are not deprived of information when they are motivated to improve their lives. PeopleNet aims at maintaining this inert motivation and at facilitating its realization into tangible living condition improvements.

The promising aspect of Internet-driven communities is their power to connect and involve self-motivated people. Those who decide to participate can find people with similar ideas and motivations. This turns their individualistic goals into socially organized activities. Of course, there is no single solution to the problems of poverty, but PeopleNet type service systems can in our view really make a difference. And this is why we have started this concept development process.

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