The emerging information society: a basket of challenges for social welfare

Authors

Jan Steyaert, PhD
Centre for Care and Welfare
Fontys Institute for Social Work
P.o.box 347
5600 AH Eindhoven
the Netherlands
email: J.Steyaert@fontys.nl

Wim Woertman
Ministry of Health, Welfare and Sports
Department of Social Policy
P.o. Box 20350
2500 EJ den Haag
the Netherlands
email: wj.woertman@minvws.nl

Abstract

Scanning social policy literature (whether from an academic, agency or government source) generates references to the major societal trends shaping the context for social welfare. Such trends include the greying population, globalisation, individualisation, … It is surprising to observe that while business and political leaders are embracing the information society and the new economy, this hardly features on the global social policy agenda.
In those cases where it does feature on the social policy agenda, technological innovation is overwhelmingly treated as an exogenous development, one that cannot be influenced and will have to be taken for granted. Social policy's degree of freedom is voluntarily restricted to softening the social impact of the information society.
Both attitudes are inadequate for the 21st century. The information society does need to feature on our agenda because it is a major societal change and brings with it a series of threats and opportunities related to social welfare. But the information society is not an independent development. One only has to look back at the way other technologies (e.g. how in the '20 and '30 women socialised the telephone, contrary to AT&T's strategy) were developed and disseminated to realise the power of societal forces.

This document brings together a number of elements arguing the social importance of the information society and the 'degrees of freedom' available to social policy. One of the challenges for social welfare in the 21st century will be to engage with technology, moving beyond the naive utopianism or dystopianism of the last decades.

Table of contents

Introduction

Words are a wonderful object for scientific research. They have a dynamic history from when they are conceived (by intention or pure luck) until they disappear in the memories of elderly persons or archives. As such they offer us a mirror of society and reflect social reality.
The words 'information society', unheard of until some twenty years ago, are certainly going through a growth phase these days. One can hardly open a newspaper or listen to the news without having it mentioned. Citizens are bombarded with new concepts such as e-commerce, e-government, e-democracy, e-learning, … all areas in which new technology will be introduced to open new horizons and to act as a panacea for any problem that might currently be present. The optimism is great, at least among industry, the press and policy-makers.
It is surprising to note that despite all this hype about technology, the domain of social welfare and social policy is not involved. Not only is it not a partner in the discussions of e-commerce, e-government, e-… but for the time being these domains also fail to identify their own programme for technology. There is no hype about e-social or e-society and this constitutes a missed opportunity.

In general terms, technology has significantly contributed to the enhancement of quality of life over the past century. Heavy physical work has to a large extent been replaced by automation, new media result in a range of applications at work, in the household or in leisure, new information technology is now generating opportunities in the area of health, education, communication, … The current wave of technological innovations results in a vast array of new products and services. Despite the fears for effects on low-skilled labour, it also needs to be recognised that the technology sector takes care of an important growth in the labour market.
The relationship between social policy and technology is complex and features as many positive as negative aspects. Assistive technology (whether high or low tech) took care of an important enrichment in the life of elderly and disabled citizens. Medical innovations (machines, pharmacy and professional treatments) increased the average health of citizens. Communication media such as the telephone and more recently e-mail increased communication among citizens and disentangled social networks from residence.
On the other hand, the replacement of labour by automation has made low-skilled workforce vulnerable. The inequality in access to the information society results in new emerging forms of social exclusion (the 'digital divide'). Media as television and radio increase the supply of amusement and information but also support individualisation. As such, the Walkman is the symbol of the most ultimate individualism in consumption of culture. Internet now takes that development even further. Social cohesion is subject to fundamental changes caused by these technological innovations.

Both regarding the technology and the societal effects thereof, there is no need for fatalism, for a determinism that does not leave any room for policy action. Technical innovations can and are being influenced by societal factors in every stage of their being, from conception through to production and retailing. It is therefor vital to replace the fatalistic attitude of 'we can't influence the way technology is deploying' with a pro-active attitude that engages with technology and through creativity and innovation steers it towards supporting social welfare. This can take many forms, such as embracing technology in the fight against social exclusion (e.g. technology based learning for unemployed citizens, …) or supporting new

technology development aimed at enriching social cohesion (e.g. virtual communities, e-democracy, e-voting, …).

In this document, we will identify some of the reasons why social policy is not engaging itself with technology in the form of four misconceptions about the nature of technology. Consequently, we will describe the case study of the Dutch Ministry of Health, Welfare and Sports and their department of social policy as one of the examples of how social policy can engage with technology. Finally, as conclusion, this document will formulate a call for more societal learning in this area.

Social welfare and technology, a story of self-censorship

Social welfare actors world-wide are not really engaging with technology. None of the international agencies and hardly any of the national ministries or agencies have invested significant energy in trying to map the relation between social welfare and technology. As a consequence, technology people often treat social welfare as being a gathering of luddites.
In our analysis, the mutual mistrust between social welfare and technology is grounded in four critical assumptions. None of these stands up to even superficial scrutiny, for each can easily be replaced by an alternative. Together, these alternatives provide an argument and a context for a more engaging and constructive relation between social welfare and technology.

Focus on technological aspects versus functionality

A first assumption often made is that engaging with technology implies having to know about technology and the way it works. For engineers, this may be true as technology is an aim in itself from their perspective. From a social perspective, technology is solely an instrument to achieve other aims. Unfortunately, in the past decades, there is a myriad of examples of people engaging with technology from a social perspective but still fiddling with the nuts and bolts of technology. In 1992, we compared this situation with finding your way in a dark building (Steyaert, 1992). You do not have an idea where you are, where the walls or the room are and how to get to your destination. Information is the light beam you can use to analyse your position and your environment, identify your destination and explore ways to reach it. Much scholarly work has been focused on the construction of the torch, the different parts of it, the quality of the lamp, the type of energy supply, and so forth. Some research focused on the light beam that comes from the torch, the clarity and diffuseness of it. However, very seldom attention is given to the most critical element of the person holding the torch and how they use it to find their way around.
In the work on social welfare and technology, this translates in a focus on technology (what databases to use, where to apply neural networks, …) resulting in a technology-push rather than a demand-driven development. From a social perspective, such focus on the technology aspects of technology can only be described as irrelevant and distracting. The real issue is the functionality of the technology and the way it fits in with existing or results in new characteristics of social welfare (e.g. social exclusion, social cohesion, social service provision, …).

Utopia or dystopia versus realism

A second assumption often made is that technological innovation will bring us either utopia or dystopia in the coming years. One only has to browse through the technology literature to encounter statements like 'in 40 years, everybody in the world will be substantially more happy thanks to internet' (Jacob van Duijn, co-owner Netlinq, Vrij Nederland, 25 December 1999). On the other hand, the dystopian statements are equally simplistic. Technology is not the big factor that will cause our society to 'go down the drain'.
Within the current situation of lack of empirical data, both utopians and dystopians can claim to be right. No validation of their statements can be done with the available data. Both result in fascinating literature (More, Orwell, Huxley, …) but provide little ground for a constructive approach.
On some aspects of welfare and technology, we do have empirical data. Examples include the digital divide (McConnaughey, Lader, & al, 1999; McConnaughey, Lader, & et. al, 2000; van Dijk, de Haan, & Rijken, 2000) and social networks (Wellman, 1999; Wellman & Hampton, 1999). In these situations, more complex and surprising visions on the relation between social welfare and technology emerge (Steyaert, 2000, 2001 (in press)).
Surpassing the simplicity of both utopian and dystopian approaches, the alternative of realism is emerging. It is more complex and does not easily lend itself to catchy statements. Neither does it overvalue the importance of technology. It becomes one of many societal developments (similar to demographic changes, economy, …) that has an effect on social quality of life and consequently is subject to social policy.

Technology as an independent development versus constructivism

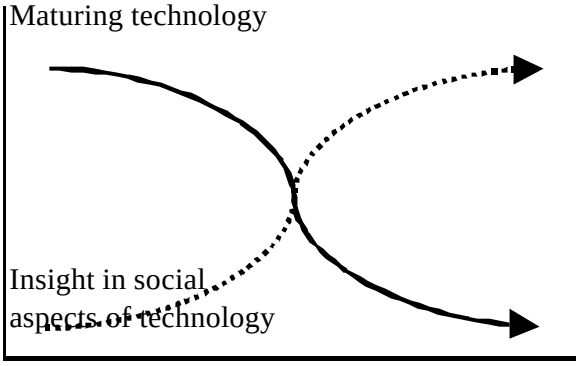
Technology is not only a significant societal development, is it also a development that is steered by society. The history of technology provides us with many examples in which innovation does not go its own 'natural' paths but is steered in certain directions by specific groups in society. One example is the invention of the alarm clock, developed explicitly for the monks in the 13th century. Believing that joint prayer was more effective in getting the message to God than individual prayer, monks were the only group in society with a need for another daily rhythm than that of the sun. Within that context, they asked the early clock-makers to develop the alarm clock. And we still notice the effects nearly every morning!
The telephone provides us with another example. While designed and marketed by Bell and his company to be used for short business communications, in the twenties and thirties women 'highjacked' the technology and turned it into a medium for social communication (Fischer, 1992).

The relation between technology and society is not one of exclusively the first having an impact on the latter. Technology is not an independent force with own 'natural' development dynamics. Rather, societal forces shape it. Consequently, there is mutual interaction between technology and society (Smit & van Oost, 1999). This is called socio-constructivism (Bijker, 1995; Bijker & Law, 1992; Bijker, Hughes, & Pinch, 1987).
Part of these societal forces on technology are non-planned actions that result in (non-) development or (non-) deployment of certain products and services. Part of these societal

forces can however be steered by action groups and/or government. It is in this area that the leeway for a social policy on technology can be found.
An example of society steering technology can be found in the Design-for-all movement. Rather than develop assistive technology for specific user groups (e.g. screen interfaces for people with visual impairments), the USA legal framework (e.g the American Disability Act and the American Telecommunication Act) enforced industry to implement a minimal level of accessibility in their products and services. This is the background for e.g. Windows having built-in accessibility tools[1].

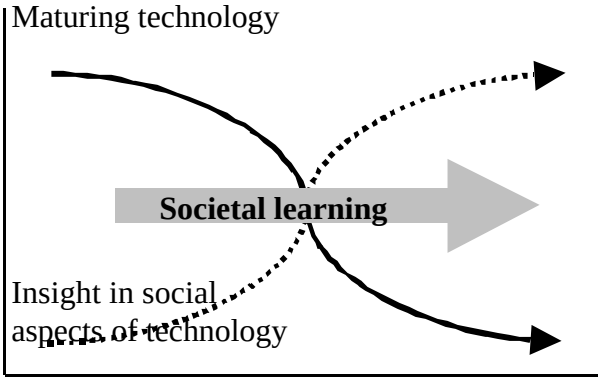
Collingridge versus societal learning

The dilemma of having to initiate policy without already knowing what the social consequences of a specific innovation will be, was described by Collingridge and is consequently named the Collingridge dilemma (Collingridge, 1980; Croy, 1996). Once an innovation is introduced in society, as time progresses both the diffusion increases (or the innovation is replaced by improved technologies) and the technology matures. Both developments reduce the degrees of freedom to change the innovation (full line in graph).
A second development over time is the increased insights in social aspects of the innovation. The knowledge about the way the social context shapes the innovation (e.g. earlier examples of alarm clock and telephone) and the knowledge about the way that technology encroaches on the social quality of life increases as time progresses (dotted line in graph).



The information society, although much talked about, is still in its infancy. We have over the past years seen many innovations (internet, mobile phones, …) but essentially, this is nothing more than the basic infrastructure of the information society. Within this context, different user groups will develop and nourish a myriad of applications.
The insights into the social aspects of the information society are equally young. There are many utopian and dystopian statements about the impact of the technology on society, but both are equally unsubstantiated and often contradictory to each other.

However, we see more than a maturing and diffusing technology and a growing insight. As described in this text, amidst the uncertainty there is also the process of societal learning.
Community cannot wait until either the technology has settled down or full insight into its social aspects is available. As such,



[1] http://www.microsoft.com/enable/, http://www.corel.com/accessibility/ and http://access.adobe.com/

societal learning is the response to the Collingridge dilemma.
Within this learning process, some initiatives take an advance on future and work with leading -edge technology. Others survive themselves and reflect a strategy that is surpassed by technological progress or wider diffusion. Working in the field of uncertainty created by both developments highlighted in the Collingridge dilemma has certain implications for social policy. More than anything it calls for flexibility. Opportunities get lost if initiatives stick to once-made strategies (e.g. because that is what was agreed with funding sources). Societal learning happens in a dynamic environment full of changes and as such much be built on continuous monitoring of the environment, the appropriateness of the initiatives and the redefinitions of problems and solutions.

From theory to practice: Dutch social policy as a case study

As a case study of how social policy can engage with technology, the following will describe the relevant work of the Social Policy Department of the Netherlands Ministry of Health, Welfare and Sport. This department believes the topic to be a very important one, and one that is bound to become even more important in future. This text will give a short presentation of the activities that the department is developing within 'Social Policy and Technology', together with their goals.

At the start, it is useful to clarify the social policy in the area of Information and Communications Technology, or ICT for short. With this policy, the department is striving to achieve two important objectives:

- First, the department wishes to help bring about a situation in which every citizen can take a full and equal part in the 'information society'. In an open, democratic society, we cannot justify having citizens who are unable to contribute, who are excluded and must stand on the sidelines. The 'democratic content' of the information society will depend on how successful we are in allowing all citizens to take an active part in that society.
- Second, the department wishes to help in developing the social potential of technology. It is quite clear that the potential opportunities and possibilities of technology are not only those of 'e-commerce' and 'e-government', but also those of 'e-social'.
  For many years there has been little more than passing interest in the applications of ICT in the social field. This was sometimes even the case - or perhaps we should say, *particularly* the case, among the representatives of the social sector itself. However, in recent years we have seen a clear turnaround in this thinking. Not only has it been realised that technology can make a significant contribution to social quality and to the 'democratic content' of society, we now see many more actual examples of technology being used to these ends. In other words, the step from 'good-ideas' to 'good-practices' has been made, and is continuing to be made to an ever-increasing degree.
  We recently conducted an international survey (Rijkschroef, Steyaert, & Hordijk, 2000). This revealed over one hundred examples of technological applications that are geared towards the social quality of society itself.

In order to achieve these two main objectives, the department has set policy objectives. What is the ministry doing, together with others, in order to achieve these objectives? In essence, the department is following three main courses of action, or 'policy lines':

- First, the aim is to chart and to study the social implications and consequences of technology. After all, one must know these implications and effects if one is to devise and apply an appropriate policy.
- Secondly, activities are initiated to influence policies and practices in the field of technology from the point of view of fostering social quality. In doing so, the department enters into joint programmes and projects with others.
- Thirdly - again alongside others - the department is encouraging the development of new applications of technology in the social field.

Each of these policy lines will be described hereafter.

Study the social implications and consequences of technology

This is primarily a question of gathering knowledge - knowledge regarding the social implications and consequences of ICT which are of significance to our current and future social agenda. We are thus seeking answers to questions such as:

- How will the interrelationship between housing, employment and other social functions and activities develop under the influence of technological possibilities? What consequences will this development have in terms of, say, spatial planning?
- What about the accessibility of ICT for the individual citizen and groups of citizens? Is there currently a 'digital divide', or will there be one in future? And if so, what can we do about it?
- Will 'virtual communities' take on the functions of real communities? If so, what will this mean in terms of the social fabric of society?
- What opportunities does ICT provide for the 'empowerment' of the citizen?
- Can technology in fact act as a 'lever' in improving the position of underprivileged groups and deprived neighbourhoods?
- Will various forms of digital democracy take the place of our traditional democratic institutions? For example, will we see on-line public participation in place of more traditional forms of participation?
- We must also consider the possible negative effects of technological development. Will for example unskilled jobs disappear from the labour market? And what about possible threats to privacy?
- Finally, on the global level - and certainly in view of the theme of this conference - we must ask ourselves what opportunities ICT offers the developing countries.

This list touches upon at least a selection of relevant questions that can be asked. These questions are now being pondered upon at various places throughout the world. For example, the British government has set up a research programme to answer the question of whether fundamental shifts are taking place in how people behave, organise themselves and interact as a result of new electronic technologies?

In the Netherlands, there exists now a modest incentive programme for scientific research into the social aspects of the 'digital superhighway'. This programme is sponsored by the National Council for Scientific Research, part of the scientific and academic infrastructure of our country. Another part of this infrastructure is the Social and Cultural Planning

Office, which has recently commenced a programme of research into the social aspects of technology, to include long-range forecasts and scenario studies (http://www.scp.nl/).

These questions are now occupying the minds of many people throughout the world. Nevertheless, it is clear that, when compared to the research conducted into technology itself, research into its social aspects is still relatively rare. To change this situation, calls for co-operation, a joining of forces and some serious networking. It calls for all concerned to share the results of their research, their knowledge, experience and insights so that each can build upon the results of work carried out elsewhere.

Influencing policies and practices

How are we trying to influence policies and practices in the field of ICT, and what can be said about these joint programmes and projects? To answer these questions, we must first look at the mission of our ministry, and of the Social Policy Department within that ministry.

In brief, our mission is to promote social cohesion; that means:

- to combat and prevent social exclusion of vulnerable groups
- to strengthen the social infrastructure
- to promote social rights and justice for all citizens
- to enhance the social dimension of government policy as a whole.

To achieve the aims of this mission, calls for close co-operation between all the policy domains which help to determine the social quality of society: housing, employment, education, social security, health and so on. This is why the Ministry of Health Welfare and Sport are also involved in technology and technology-related policy.

Taking our mission as starting point, we try to make a contribution to the policies and practices being developed in our country in the field of ICT. That contribution takes the form of critical examination of proposals and initiatives from the point of view of social quality and from the perspective of the individual citizen. We attempt to influence the initiatives accordingly. In doing so, we devote particular attention to:

- the position of the target groups defined under our spearheads of policy, such as underprivileged groups (certain ethnic minorities, for example) and the 'deprived' or 'problem' areas of the inner cities.
- the social and cultural preconditions which must be met if the innovations in technology are to succeed. For example there must of course be a level of support within society.

In all efforts, the department never loses sight of the basic guiding principle of the main goal policy: that all citizens must be able to take a full and equal part in the information society. Pursuing that goal results in a wide array of practical projects:

- In first place, this can be illustrated by 'Public Counter 2000'. This is a co-operative project between various ministries and social organisations and aims to bring about a substantial improvement in the provision of public information and in the delivering of public services by means of ICT. It further aims to raise the degree to which policy is

demand-led and to increase the empowerment of the citizen in terms of his or her ability to find rapid and appropriate solutions to problems, or answers to questions.

- In second place is the 'Technology and the City' project. Here, together with other ministries, social organisations and a group of experts, the department is examining what ICT can do to help solve the problems of the larger towns and cities. The project will eventually lead to a full incentive and investment programme.
- In third place comes the 'Digital Kickabout' project. Just as most neighbourhoods have an area providing informal sports facilities for local youngsters - the 'kickabout' - so this project aims to help certain social groups in the deprived areas, such as 'problem youngsters' and socially isolated older people, to become more familiar with technology. This, it is hoped, will promote their social participation and integration.
- Fourth is the project 'Knowledge Neighbourhood' (http://www.kenniswijk.nl/), which is in the nature of a large-scale experiment and a sort of leap into the future. Under this project, an urban district with 85.000 citizens (in Eindhoven) will be equipped with the very latest ICT equipment and facilities, whereupon various new functions and services can be tried out in practice.
- In the fifth place comes the 'Borders-to-Cross' project. This is a relatively small project which aims to make an inventory of new forms of collective or public decision-making processes made possible by ICT.
- And finally, there is the 'Technology and Society' programme, which is an incentive programme run jointly by the Ministry of Health, Welfare and Sports with the Ministry of Economic Affairs.

Encouraging the development of new ICT applications in the social sphere.

The question could be raised why such support from government is in fact necessary. The answer is that experience has shown that such new applications very often don't get off the ground all by themselves. There are various reasons for this.

- There are frequent market failures. Demand (in the sense of the social need) will not necessarily find supply (the technological possibilities) unaided. Technologists are often unfamiliar with the social sector. Likewise, the representatives of the social sector may know little of the world of technology.
- Secondly, the groups who have an interest in new technology (the disabled for example) may be unable to articulate their needs and demands in a way that can be readily matched to the technological possibilities.
- And finally, ICT applications in the social sphere may not be profitable enough for the private sector, especially in the early phases.

This illustrates that there is indeed a clear role to be played by the government and non-profit agencies, as a sort of 'interface' between supply and demand. This is a role which the Dutch social policy department has long fulfilled when it comes to new applications of 'assistive technology' to meet the needs of the elderly and disabled - applications which enable such people to lead a full and independent life for as long as possible. Many technological aids to independent living have emerged over the years with some government support: from advanced alarm systems to technical equipment enabling blind people to use of a personal computer.

Over the last ten years, the scope of ICT applications in the social sphere has gradually broadened. This has been at least partly due to the activities of various organisations such as HUSITA - Human Services Information Technology Applications - an international association dedicated to promoting better use of technology in the social sphere and in the service of humanity (http://www.husita.org/).

This broadening of scope has also been due to new target groups being recognised by the department, such as the so-called 'problem youngsters' and certain ethnic minorities. The department also started to look at applications with a more general outreach, able to strengthen the social quality of a neighbourhood or of society as a whole.

Eventually such developments have coalesced to form the Technology & Society programme mentioned earlier. The aim of this programme is to realise a more effective use of technological possibilities in addressing all sorts of social issues. Under the programme, incentive funds are made available for the development of products and services which serve a clear social purpose and which also involve a certain economic interest, such as opportunities for Dutch industry, or collective and/or private savings. The programme currently involves a number of ongoing projects which address:

- Prevention of work-related disabilities
- Crime prevention
- Re-integration of the disabled, and
- Learning at the workplace.

The Ministry of Health, Welfare and Sport, the Ministry of Economic Affairs and various social organisations are currently developing a programme under the title 'Technology for Social Integration.' This will encourage new technological applications in the field of healthcare, welfare and social policy. Here, the concern is primarily with those applications that are geared towards promoting the quality of life of neighbourhoods, and on individual projects that aim to increase the citizen's social participation and empowerment. Moreover this programme tries to make the social sector more aware of the social potential of technology, while at the same time it wishes to bring the opportunities presented by the social sector to the attention of the world of technology.

Conclusions

A first conclusion is that technological development has far-reaching social implications and offers new opportunities. The information society must therefore take a prominent place on our social and social policy agenda in terms of social effects, opportunities and threats.

A second conclusion is that, if we wish to develop the full social potential of technology, we must achieve closer international co-operation in this field. We are currently learning too little from each other. Even worse: we are often totally unaware of each other's activities. This must change. We must bring about a situation in which there is a full and effective exchange of knowledge, experience, insights and ‘good practices’, and in which our forces are united in addressing our common objectives.

This will become possible by setting up an international 'learning network', one in which scientists, technologists and the representatives of the social and social policy sectors work together and learn from each other.

The Dutch ministry of health, welfare and sports has proposed the idea of such a network at various occasions during the past year. The response has been mostly positive. For example, the idea was welcomed by the European Centre for Social Welfare Policy and Research in Vienna, by our colleagues in the Social Exclusion Unit in the U.K., the Flemish Ministry of Social Welfare and by representatives of ICSW Europe. We have also approached a number of experts in the social and technological spheres and they too responded with great enthusiasm. It is also worth noting that the initiative has received a reasonably positive response from the European Commission in Brussels.

If the support for the idea of a 'knowledge network' grows and the initiative gains in momentum, the Netherlands Ministry of Health, Welfare and Sport is prepared to make funding available for the further development of this proposal. And if such a network does indeed become fully functional in future, it will of course be able to rely on our support.

References

- Bijker. (1995). *Of Bicycles, Bakelites, and Bulbs: Toward a Theory of Sociotechnical Change*. Cambridge: The MIT Press.
- Bijker, W., & Law, J. (Eds.). (1992). *Shaping technology, building society: studies in sociotechnical change*. Cambridge: MIT press.
- Bijker, W. E., Hughes, T. P., & Pinch, T. J. (Eds.). (1987). *The social construction of technological systems: New directions in the sociology and history of technology*. Cambridge: MIT Press.
- Collingridge, D. (1980). *The social control of technology*. New York: St. Martin's press.
- Croy, M. (1996). Collingridge and the control of educational computer technology. *Society for philosophy and technology, 1*(3-4), available through http://scholar.lib.vt.edu/ejournals/SPT/.
- Fischer, C. (1992). *America calling, a social history of the telephone to 1940*. Berkeley: University of California press.
- McConnaughey, J., Lader, W., & al, e. (1999). *Falling through the net: defining the digital divide, a report on the telecommunications and information technology gap in America*. http://www.ntia.doc.gov/: US Department of Commerce.
- McConnaughey, J., Lader, W., & et. al. (2000). *Falling through the net: towards digital inclusion*. http://www.ntia.doc.gov/: US Department of Commerce.
- Rijkschroef, R., Steyaert, J., & Hordijk, F. (2000). *Technologie voor sociale integratie*. Utrecht: Verwey-Jonker.
- Smit, W., & van Oost, E. (1999). *De wederzijdse beï nvloeding van technologie en maatschappij, een technology assessment benadering*. Bussum: Coutinho.
- Steyaert, J. (1992). Databases and Information Systems in Human Services: Where Do We Go from Here? *New technology in the human services, 6*(1), 20-32.
- Steyaert, J. (2000). Sociale cohesie en technologie, een perpetuum mobile. In N. Schoemaker & H. Dokter (Eds.), *Ver weg én dichtbij: ICT en maatschappelijke ontwikkelingen*. den Haag: Raad voor Maatschappelijke Ontwikkeling.
- Steyaert, J. (2001 (in press)). Inequality and the digital divide: myths and realities. In S. Hick & J. McNutt (Eds.), *Social work advocacy and community organizing on the internet*. New York: Lyceum Press.
- van Dijk, L., de Haan, J., & Rijken, S. (2000). *Digitalisering van de leefwereld, een onderzoek naar informatie- en communicatietechnologie en sociale ongelijkheid*. den Haag: Sociaal en Cultureel Planbureau.
- Wellman, B. (Ed.). (1999). *Networks in the global village: life in contemporary communities*. ISBN 0813311500: Westview Press.
- Wellman, B., & Hampton, K. (1999). Living networked in a wired world. *Contemporary sociology, 28*(6).