# Community Participation in Health Informatics in Africa: An Experiment in Tripartite Partnership in Ile-Ife, Nigeria

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**ABSTRACT**
Participatory Design has mainly been practiced in Europe and North America. Our seven-year experience in Nigeria suggests that user participation is a must in developing countries also. However, the scope of participation needs to be expanded. For instance in health informatics, not only computer professionals and health providers need to be involved, but also the communities served by the health facility in question. This paper presents an experiment in tripartite partnership in systems design for Primary Health Care by designers, users/providers and community representatives in Ile-Ife, Nigeria. The experience was extremely encouraging.

**Keywords**
Participation, communities, Africa, health information systems

## INTRODUCTION TO THE PROBLEM: PARTICIPATION AND DEVELOPING COUNTRIES

Participatory Design of information systems is often seen as being rooted in the Scandinavian tradition of Cooperative Design. In the Participatory Design Conferences since PDC'90, Denmark and Norway have indeed been well represented. The strong role of trade unions and social democratic parties in Scandinavia has been regarded as conducive to participation.

Indeed, in the first PDC conference Joan Greenbaum (1993) raised the issue of whether cooperative design in the Scandinavian way is even possible in the harsher socio-political context of the USA. She concluded that for a 'home-grown' American participatory design movement, indigenous opportunity factors must be identified and built upon. Similarly, Steven Miller (1992) emphasizes that the survival and success of participatory design in the workplace depends on its ability to act within larger coalitions in the society.

If participation is so strongly conditioned by the nation's political climate, is cooperative design of information systems possible at all in developing countries where few "indigenous opportunity factors" seem to be available to ordinary workers? Nigeria for instance has been ruled by military governments for more than two decades since her independence in 1960. A middle-income developing country of the 1970s has become one of the poorest in Africa, in terms of GDP (Gross Domestic Product) *per capita*. When the price for food has increased ten-fold in five years, but your salary has perhaps doubled, you presumably have other things to worry about than participation.

In addition to the political and economic obstacles, it has even been suggested that the traditional cultures of developing countries are hostile to participation. Chrisanthi Avgerou and Frank Land write:

> *Methods for socio-technical design [...] were devised to fit the organizational behaviour norms prevailing in specific industrialised countries. There is little evidence, for example, that the idea of deciding on feasible information systems changes through an effort to reach consensus can be effective in many developing countries. Even 'user participation', one of the most fundamental features of socio-technical design is doubtful whether it is applicable and effective in rigid*

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> *bureaucracies traditionally run by the authority of superiors rather than the initiative of employees.* (Avgerou and Land, 1992)

Is Participatory Design of information systems thus just a luxury for the well-to-do in 'democratic countries', and not for Nigerians?

In the rest of this paper, we first briefly present existing experience with participatory methods in Nigeria in another domain, namely community participation in Primary Health Care (PHC). We then describe our prior experience in an information systems project in a university teaching hospital in Ile-Ife, Nigeria. We conclude that for PHC information systems design, tripartite participation is required — a partnership between designers (computer personnel), users/providers (health care personnel) and community representatives.

The main contribution of this paper is to report on an experimental tripartite workshop organised in Ile-Ife for a participatory requirements analysis of a PHC information system. Drawing on the workshop experience, we then discuss the potential and obstacles of participat ing countries in general. We argue that community orientation, or tripartite partnership, is a challenge that the participatory design movement must face both in industrialized and in developing countries.

## PARTICIPATORY METHODS IN PRIMARY HEALTH CARE

Information systems design is not the only productive activity where the need for participatory methods has been identified. The dismal experiences of many top-down international development projects pushed non-governmental and intergovernmental organizations to develop various Participatory Rural Appraisal and Development approaches since the late 1970s (e.g., Chambers, 1992; see also the *PRA Notes* series by the International Institute for Environment and Development, London).

If Avgerou and Land are right in suggesting that the traditional structures of developing countries make user participation unfeasible, then participatory methods should not work well in development projects, either. On the other hand, if participatory methods *do* work in these projects, then such experience should be valuable for information systems development in developing countries.

Since our field of application is health informatics (the application of modern information and telecommunications technology in health care), we discuss below the experience of participatory methods in health care delivery in Nigeria.

### The national health policy of Nigeria

Nigeria is a Federal Republic which consists of thirty states. Each state is divided into local government areas (LGAs). Each LGA is further divided into political and health districts or wards. Each political ward is the constituency of one local government councellor. With some 100 million inhabitants, Nigeria presents about 20 percent of the Sub-Saharan African population.

The National Health Policy of the Federal Government of Nigeria (1988) is based on the principles and philosophy of primary health care (PHC) as stated in the Alma Ata declaration of the World Health Organisation (1979). The policy makes the provision of primary health care the responsibility of the Local Governments. PHC is defined as:

> *Essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost the country and community can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination.* (WHO, 1979)

### Community participation in PHC in Nigeria

The importance of community participation has been emphasized in the implementation of primary health care services over the years. There has also been a shift towards multidisciplinary programmes in PHC. This has been achieved in Nigeria by the promotion of health systems research and university/community partnership programmes. The universities in Nigeria have a large pool of technical expertice. When the academicians, local government authorities and communities work as partners in a project, this encourages capacity building, a sense of ownership and sustainability of the project when the donors leave.

This has been noted for instance in the Applied Diarrhoea Disease Research projects in Nigeria, funded by the Harvard Institute for International Development. These projects involved the communities in the implementation of programmes as a result of baseline information collected from these communities. The communities were given a feedback of all data collected in their community.

University/community partnership projects have also been funded by the Primary Health Care Development Agency, Nigeria, with all the medical schools in the country. This has involved primary health care workers at the Federal, State and Local Government levels, LGA officials, university staff, students and community members all over Nigeria.

### Lessons from PHC projects

Three basic steps need to be taken to get full participation of all parties: (i) entry into community, (ii) capacity building, (iii) project implementation points.

The correct entry points into the communities need to be found. The entry points in this case are the Local Government authorities — the Chairman (who is the government head, voted in by the people), the Supervisory Counsellor for Health (one of the elected councellors), and the PHC coordinator (the most senior civil servant in health care on the local level). Opinion leaders from among religious and professional organizations as well as elders need to be involved.

There is a need for capacity building for all the arms of the partnership — LGA officials, health workers, university staff, and community members. Different levels of participation will exist and this should be spelled out from the beginning of the project. The pace of the researchers may not always be the pace of the community and this should be anticipated from the beginning.

Community members should be involved in project identification and implementation. This gives the community a sense of ownership and encourages sustainability. In Nigeria, LGA officials change very frequently, but if permanent residents are involved as community members, they will want to know what happens to their project even when an official leaves. It is very important to have a mechanism for feedback that will facilitate community empowerment and sustainability, and help to keep the project on course and in focus.

### The PHC information system

The National Health Policy has stated that for effective management of health services there is a need to establish a national health information system. What information is needed? Who provides this information? Information on vital health statistics such as births and deaths are needed to plan and monitor health services at the local level.

This information will be obtained largely from the community, as most of the deaths and births still take place at home in most parts of developing countries. This is why there is a need actively to involve the communities at all levels in any programme to develop a Health Information System (cf. Braa, 1996; Braa and Heywood, 1995). The community needs to be educated on the reasons why such information should be provided to the appropriate authorities. Processed information must then be fed back to the community.

## THE CASE SETTING: THE IFE PROJECT ON HEALTH INFORMATICS

Computers have been used in Nigeria since the early 1960s, and the advent of the microcomputer created a real boom in the late 1980s. Some hundreds of mostly small companies emerged to sell computer hardware and related services, in addition to the in-house departments in transnational companies and government parastatals. However, in the health care sector the use of computers is limited to non-clinical, non-managerial applications like word processing.

The Obafemi Awolowo University (OAU) in Ile-Ife, South-Western Nigeria, is one of the biggest federal universities in the country. In the late 1980s the OAU Teaching Hospitals Complex (OAUTHC) started to consider the introduction of computer technologies to facilitate the management of medical records in its two hospital units.

### The Hospital Information System Project, 1989 to 1996

No appropriate applications were available to the OAUTHC in 1989. By a lucky accident, however, the OAU Department of Computer Science and Engineering was simultaneously embarking on a research cooperation with the Computing Centre of the University of Kuopio, Finland, which had notable practical experience in health informatics. A Joint Project was established by the three institutions.

In the beginning it was not self-evident that a computer-based information system would prove feasible and sustainable, so a stepwise strategy was adopted. A rudimentary in-patient system was designed in a bottom-up manner in 1989, jointly by OAUTHC Medical Records officers and the computer scientists. Public domain software available from the U.S. Department of Veterans Affairs was used as a starting point (Makanjuola *et al.*, 1991; Soriyan *et al.*, 1996).

The system was designed in a prototyping manner, without using rigid methodologies. The data base and the data entry functions were designed to reflect existing forms and procedures in the hospital. Most of the Medical Records personnel had not used a typewriter before, not to speak of a computer, but since the purpose and concepts of the system were familiar they learned to use the system with enthusiasm and without major problems.

Early on we recognized that the ease of implementation was due to the fact that the responsibility for the system was trusted to the computer operators — trained Medical Records professionals (Daini *et al.*, 1992). Their dedication to "their own system" has made the computer operations survive blackouts, viruses, hardware failures, software problems, lack of funding, strikes, political crises, and so on. Without user involvement and management's commitment, the enormous amount of obstacles would long ago have led the system to whither away.

The system has been in routine use in the Ife State Hospital of the OAUTHC from January 1991, running on a microcomputer with three dumb terminals. It is operated by OAUTHC Medical Records officers, while the OAU Dept. of Computer Science and Engineering provides front-line technical support and the University of Kuopio is consulted in more problematic issues (Daini *et al.*, 1992). To facilitate communication within the project, a point-to-point electronic mail link was established between Ile-Ife and Kuopio, and later gatewayed to the Internet.

Since the system was intended to be an experimental first step, it was designed to cover only a part of the admission-discharge information routinely collected by the hospital's Medical Records Department. It has considerably relieved the task of producing monthly and annual statistics of morbidity and mortality to the Federal Ministry of Health. The retrieval of patient information for routine and research purposes is also supported by the computer system. However, its benefits have not spread much beyond the Medical Records Department. Why?

### Critical assessment and future plans

The Ife Project proposed an international conference to be held in Africa to share experiences on health informatics, and the initiators were requested to organise the conference, HELINA'93, in Ile-Ife itself (Mandil *et al.*, eds., 1993).

This very exacting task was followed by a period of severe political crisis in Nigeria, when the university and hospital activities where virtually halted for several months in 1994. Combined with a lack of external funding, leading to a dearth of systems developers, these obstacles slowed down the expansion of the computer system from what was originally planned.

After the HELINA'93 conference, the OAUTHC management critically assessed the experience thus far and concluded that not enough clinical benefit was gained by the system (Makanjuola *et al.*, 1995). In joint project meetings it was decided that more feedback information was to be generated from the computer system to doctors, nurses and the management. In 1995-96, a number of highly popular "awareness courses" were held for various groups of hospital staff, to make the potential and limitations of informatics more palpable to them (Adejuyigbe *et al.*, 1996).

The OAUTHC also decided to employ a full-time programmer on their staff in 1995. Before that, the project had relied on a systems designer of the OAU Dept. of Computer Science and Engineering, who had many other duties as well. The chronic dearth of teaching personnel had jeopardized previous attempts to recruite more technical resources to the project from the Department.

In the next phase of the Ife Project, we plan to expand the scope of the computer-based system *within* the hospital, to include laboratory test results, drug prescriptions, pharmacy stores and out-patient clinics. This will make the system much more directly relevant to the majority of the hospital personnel. Another major challenge is to extend the benefits of the computer system *beyond* the hospital — to use the hospital as a resource centre for primary health care (Health Centres and Health Posts).

For the latter objective, the OAUTHC is an optimal test ground since the complex comprises not only two teaching hospitals but also three teaching health centres. The OAUTHC is situated in Ife Central Local Government, which is one of the 23 local government areas of Osun State. There already exists a working relationship between the OAUTHC and the PHC staff of the local government. The Eleyele Comprehensive Urban Health Centre, for instance, is on the one hand part of the OAUTHC as a teaching facility in general practice and community health, on the other hand it is also in charge of primary health care delivery for the Iremo District of the Ife Central Local Government Area. Patients who cannot be treated in the Health Centre are referred to the Ife State Hospital of the OAUTHC.

In the next phase of the Ife Project, we also plan to develop technologies and practices to improve the cooperation between the local communities of the Iremo District, the Eleyele Health Centre, and the Ife State Hospital, as an action research case. Our hypothesis is that information collected from the local communities and the Health Centre's activities can be processed in the hospital (e.g. by using the Geographic Information System technology), and then fed back to the communities. Such information would empower the communities to be better aware of their health risks and to better effect the health care services at their disposal.

## TRIPARTITE PARTNERSHIP IN I.S. DESIGN IN IFE: AN EXPERIMENTAL WORKSHOP

During the critical assessment of the previous phase, we had already theoretically come to the conclusion that the scope of participation should be expanded from designers and users (health care workers) to the communities (Korpela, 1994). In essence, the tradition of designer–user collaboration in systems design and the tradition of health provider–community collaboration in PHC should be combined into three-tier participation, as we first called it. Since the Finnish researcher in the team did not find previous examples of such participation, he suggested that we should organise an experiment of our own.

The experiment was to be conducted as a workshop, to be attended by computer professionals from the OAU and the OAUTHC, health care providers and administrators from the Ife State Hospital and the Eleyele Health Centre, health administrators of the Ife Central Local Government, representatives of the local communities from the Iremo District, as well as two researchers from Finland.

### The community: Iremo District in Ife town

The Iremo District is one of the twelve health districts of the Ife Central LGA. Ife itself, or Ile-Ife, is one of the most ancient Sub-Saharan African towns, founded about a thousand years ago (Phillipson, 1993). It is traditionally considered the spiritual capital of the Yoruba people, of about 20 million, who inhabit South-Western Nigeria and parts of neighbouring countries. Nevertheless, without major industries and with some 200,000 inhabitants only, Ife is not considered a major city in the country. The university is the biggest single employer.

The project participants learned from previous studies (Awotidebe and Adesina, 1993; Adesigbin *et al.*, 1993) that the Iremo District is predominantly urban, comprises some of the most traditional quarters of the town next to the King's Palace as well as some "modern" residential areas, and is inhabited by about 42,000 people. Roughly 3 % of the population are children under one year and 13 % under five years, while 41 % are in reproductive age and 5 % old people of over 64 years.

The most prevailing health problems in the district are, according to the LGA clinic reports, malaria and diarrhoea, which are linked with problems in water and sanitation. 42 % of the houses have tap water, 51 % a well, while 7 % rely on rain water — 22 % have W.C., 56 % pit latrine, while the others use bush or have no toilet facilities. An average house is inhabited by 12 persons belonging to 4 households.

Iremo District has its own traditional system and community organisations which need to be involved. These are the traditional rulers and leaders of each ward within the district. The district is divided into ten health

wards. Each ward has a health/development committee and two voluntary health workers who are nominated by the community members. In addition to the Eleyele Comprehensive Health Centre, there are nine private health facilities in the district.

**The preparation of the workshop**

Due to a communication mixup, the practical planning of the workshop was started barely a week in advance, by two of the authors (Mrs. Soriyan and Dr. Onayade) who then involved other representatives of the OAU Dept. of Computer Science and Engineering, the Dept. of Community Health, the OAUTHC, and the Ife Central LG.

The purpose of the workshop was defined as (1) to build an initial *shared understanding of current problems* in the health care services as perceived by the communities, the service providers and the system development team, and (2) to build an initial *shared "vision of the future"* of what should be targeted by the project.

It was decided that the first two days, Thursday and Friday 4–5 July 1996, were dedicated to introductory lectures and group discussions at the Eleyele Health Centre, and the third day, Monday 8 July, for a tour around Iremo District.

The participants were invited from three groups. The *informatics group* comprised all the technical personnel previously engaged in the project (two from the OAUTHC, one from the university) and four new volunteers from the university (a lecturer and three Graduate Assistants), in addition to one senior representative of the Dept. of Computer Science and Engineering. Four Medical Records staff of the OAUTHC were included in this group, since they are professionals in information management.

The *health care group* included six doctors (Residents) and four nurses from Eleyele Health Centre, one community health expert from the university, and the Ife Project Coordinator (consultant surgeon) representing the OAUTHC. The Ife Central LG's health authorities were represented by the PHC Coordinator and two of her staff from the Monitoring and Evaluation Unit.

The *community group*, ten in number, were nominated by the Local Government's PHC Coordinator from the Iremo District Health Committee and among the voluntary health workers. Three of the members were male and seven female, representating different age and professional groups. All were required to be literate in English, although the core contents of the workshop were translated into Yoruba.

The workshop organisers recruited several voluntary resource persons from among the participants for specific assignments. These included the session chairpersons, facilitators, rapporteurs, and tour guides. The facilitators were advised to (i) be flexible; (ii) create a non-threatening environment, i.e. no right or wrong answers; (iii) encourage participants to talk, express opinions, ask questions and interact; and (iv) encourage participants to use their own terms and expressions.

A general outline of a few key topics was pre-prepared for each group to deliberate on. Of course these outlines continued to change during the workshop, to reflect the observations and discussions. At the end of each day, a short meeting of the workshop officials was held to review the day's events and to modify or add more to the outline for the following day.

Rapporteurs were also assigned to each group and general session. Since the community members could not all speak English, the official workshop languages were English and Yoruba. Whichever language was spoken, a summary was translated into the other. All through the workshop, recording was both written and taped, and anonymous comments were collected at the end of each day from all participants.

**The course of events**

The workshop was attended by 42 participants, equally divided into men and women, plus one small baby at her mother's back. Some participants could not attend all the time because of other duties, but about three quarters were always present.

According to local tradition and to emphasize the importance of the event, the workshop was started by a formal Opening Session. In the beginning, all participants introduced themselves and told in a few words what they expected of the workshop. Understandably all were still rather hesitant. Then the Chairman of the Ife Central Local Government and the acting Chief Medical Director of the OAUTHC delivered there welcoming addresses, and the Finnish researcher (Dr. Korpela) briefly explained the idea of the workshop.

After a break the workshop was continued in a less formal atmosphere. Two invited papers were presented in order for the participants to have a degree of a shared background. These papers were both in English and Yoruba. The first one was *An overview of PHC* while the other was *An overview of Health Informatics*. Since it was a participatory workshop, the participants were asked to explain concepts like 'health', 'information' and 'system' from their own perspectives.

For instance, a community member explained (in Yoruba) a 'system' as *a plan, setup, steps taken*, a nurse (also in Yoruba) as *units put together to make up something comprehensive*, and a computer professional (in English) as *people, resources and tools working together*. The speakers then summarised and gave their own perspectives. Questions were invited from the participants and answers were given not just by the speakers but by others who had ideas to share.

The third session of the first day was for group discussion on the problems, objectives and solutions as perceived by the group. To let people of the same background discuss among themselves, each of the three partners — informatics, health care, community — had a group of their own at this point. The groups discussed the pre-prepared outline for about one hour. Each group chose their

chairperson and secretary. All three groups used the same outline, to see how each partner group perceived the issues in question. After this brainstorming session, each group gave a summary of their elaborations and the results were discussed in a plenary session.

The problems and solutions presented reflected the perspective of the group in question. The community group emphasized economic hardship, nutrional problems, lack of public toilets, inadequate sources of water, insufficient information about immunization services, and so on. As solutions they suggested that the health providers and voluntary health workers should make visits, educate people and be examples by their own lives. The Ward Health Committees should mobilize opinion leaders, including landlords, for environmental sanitation. The members stressed that the communities are ready to contribute in money and voluntary work for such objectives.

The health care group summarized the problems as *manpower, money and materials*. Their main objectives were to increase awareness of health issues among the communities, increase community participation and involvement, and to provide adequate services. The health care group lamented that patients do not give correct information when attending the Health Centre.

The informatics group mentioned the lack of trained health informatics personnel, maintenance and funding/sustenance as the main problems. They suggested various awareness programmes, formal training and sharing of existing resources as solutions.

During the general discussion, the reasons for patients not providing correct information were dealt with. Community representatives explained that patients don't know what that information is needed for, and are afraid that it can be used against them, e.g. for tax collection. The community members urged doctors and nurses to visit the District and Ward Health Committees to educate them about the issue. Some of the health care group doubted whether the Committees worked in practice, but the community members and the LG health officials passionately assured that they meet regularly, on a specific day of every month.

On the second day, another group discussion session was held, this time in mixed groups, on what information should be collected by whom, and to whom should the information be fed back. The group results were again reported to a plenary session for discussion. Much of this session was spent in discussing the information collection procedures currently in place within the health care delivery system, since most of the participants were not well aware of them.

In the afternoon, a third brainstorming session took place, again in three mixed groups, about the implementation and way forward. In its report to the general session, one of the groups reminded others that the manual PHC information system is already in place — based on a house numbering scheme, home-based personal PHC cards and clinic-based records. Work should be concentrated on improving the existing system. Another group suggested that a broad-based Task Force, comprising all the three partner groups, should be formed to draft a workplan and follow up.

All now stressed the District and Ward Health Committees as a means for mass mobilization and awareness raising. The health and informatics groups were advised to use churches and mosques, markets, schools and meetings of professional and trade unions as well for that purpose. It was also regarded as important to educate policy-makers and to involve various levels of government, particularly because fund-raising was seen as one of the big problems.

The last day of the workshop was a tour by bus to the "home grounds" of the three partner groups. First, the participants were led through various parts of the Eleyele Comprehensive Health Centre and the Ife Central LG's main Health Centre in Enuwa. Special attention was paid to the information recorded at each point, and what the information was used for. The participants were given copies of the most important forms and cards used, both home and clinic based.

The Local Government's PHC Coordinator (Mrs. Osewa) explained in detail the Essential Drugs Revolving Fund, which is operated by the District Health Committees. The Federal Ministry of Health gave the Health Committees of the LG 500,000 naira as seed money, which they can use for purchasing essential drugs at a preferential rate through the LG. The drugs are distributed to the voluntary health workers, who sell them to patients at a slightly higher cost. The Health Committees can use the difference as they choose — in increasing the amount of drugs available, in digging a well, or indeed in an awareness campaign.

The tour continued to three parts of the Iremo District, led by the community representatives. During the visits, the PHC house numbering system was studied, the effectiveness of the home-based PHC cards discussed, and some voluntary health workers interviewed. A voluntary birth attendant reported that she may help her neighbours in six births a week, besides taking care of her main job as a trader. The Health Committees may give the voluntary workers small gifts from time to time as encouragement, but no salary.

The next stop of the tour was at the Computer Building of the OAU. Many participants saw a computer for the first time. The informatics group demonstrated computer-based communication over the Department's new Local Area Network, and explained another recent achievement: the international email connection through a commercial service. The community representatives were particularly impressed by the communications potential.

The tour ended at the OAUTHC's Ife State Hospital, where the Medical Records officers demonstrated the existing computer-based information system. Now it was the turn of the Health Centre's nurses to be enthusiastic about the ease with which individual patients' information could be retrieved.

At the end of the workshop, the participants convened over lunch to review the tour and the workshop, and to prepare a communique. All participants of various backgrounds were in a high mood, inspired by the amount of new things they had learned. The leader of the community group (Prince Adesanmi) summarized a general feeling by urging that the workshop must not be a single event, but a start of continued collaboration to implement the prospects now opened.

The workshop ended with the community members leading with a song in Yoruba given below:

*Yio see se asiko ni o ma gba o*
*Yio see se asiko ni o ma gba o*
*Aseti o si oo ye*
*Aseti o si fun wa ni'le e 'fe*
*Yio se e se asiko ni o ma gba o.*

It will be possible though it will take time
It will be possible though it will take time
There is no impossibility
There is no impossibility for us in Ife,
It will be possible though it may take time.

## DISCUSSION: PARTICIPATION AND DEVELOPING COUNTRIES REVISITED

We mentioned earlier that the successes of the Ife Project so far can be attributed to the active participation of users and management alike. In afterthought it is evident to us that the slow progress in producing clinical benefits also has to do with participation; this time with the lack of it. If representatives of doctors and nurses had been involved in the project as keenly as the Medical Records staff was, then the need for more feedback information would have materialized earlier on. Every time there has been a lack of sufficient cooperation between the computer and hospital personnel, for whatever reason, the entire project has suffered.

At the same time, we were initially quite unsure about whether the cooperation could in practice be extended to local communities in designing a PHC information system, given the wide disparity of backgrounds and the complexity of the task. The results greatly surpassed what we dared to hope.

In the following, we will reflect on our experience from wider political, cultural and societal perspectives, before drawing some practical lessons.

### Participation and the political context

When the issue of community participation in Nigeria is raised, people from Europe and North America often assume that the military government is the main potential obstacle to think about. However, in practical life the *form* of the top level of government does not matter as much as ordinary people's powers to have an impact on the local level. The top-level government, be it military, single-party or multi-party, has mainly an *indirect* influence, by promoting popular participation, motivation, faith in the future, and equal opportunities — or an authoritarian political climate, apathy, insecurity of life, and poverty.

The local level of government has a more direct role. Particularly in Primary Health Care, the fortunes of bottom-up participatory initiatives are largely dependent on the degree of popular influence on local government, and the latter's capacity to support such initiatives. In Nigeria, the creation of the elected Local Governments in 1976, to replace the colonial legacy of top-down local administration, was an important change. During the last ten years, the LGs have gained more autonomy and influence (Adejumobi, 1995). However, their economic base is futile, and the State Governments can severely curtail their autonomy. For instance, the PHC Coordinators of the LGs are appointed by the State Governments, and rotated so frequently that the continuity of administration is impeded.

It is true that organizational barriers, economic hardship and the general insecurity of life create obstacles to cooperation in developing countries. Yet it is not totally impossible to overcome these obstacles. As Braa and Monteiro (1996) put it, in order to flourish and become viable, people-based local initiatives need to incorporate themselves into broader institutionalized networks, in a government-created 'enabling environment'— but the situation is never static. A participatory experiment like our workshop can grow, if it can identify an institutionalized network of social forces to support itself — religious and professional associations in the community, traditional elders, voluntary health workers, Health Committees, PHC-oriented doctors and nurses, socially responsible computer professionals and academics, committed PHC administrators, 'listening' Local Government councellors (Korpela, 1995).

Our experience suggests that participation and cooperation is not just possible in a deprived African country, but a must. Simply, a computer-based system will not survive the harsh socio-economic conditions without the dedication of its users, and dedication grows up from the users being genuinely involved.

Whereas in Scandinavia and the USA participatory design is usually seen to involve the day-to-day workers only, we stress the importance of involving the management as well. The management's commitment may be important in industrialized countries too, but in developing countries it is doubly important, and commitment again grows from the management being genuinely involved.

### Participation and traditional culture

The hypothesis of traditional culture as an obstacle to participation in developing countries has been discussed in detail elsewhere (Korpela, 1996). In brief, existing scientific literature on the Yoruba people inhabiting South-Western Nigeria does show a trend towards hierarchy in the traditional society, but also a strong balancing effort towards consensuality. Existing "rigid bureaucracies" in Yorubaland cannot be attributed to traditional Yoruba culture, but to the anti-democratic colonial rule. Participation cannot be excused as something alien to indigenous cultures; rather it is an antidote to the

administrative culture imported from Britain during colonial times.

We would regard traditional culture as a potential "indigenous opportunity factor" in Greenbaum's sense, rather than as an obstacle in Avgerou and Land's sense. For instance, the traditionally strong position of women in West Africa is visible in the computing profession also (Soriyan and Aina, 1991). It would be interesting in the next phase of the Ife project to intentionally experiment with how to harvest consensual aspects of the local traditional culture for an "Ife Approach of Participatory Design".

**Societal justification of information systems: The need for three partners**

The PDC'96 Call for Papers atates that "participatory design projects have combined the skills and knowledge of workers with the technological and organizational expertise of design practitioners in efforts to develop technologies and practices that improve people's work lives". In our experience, this definition has to be expanded in one important direction. Who decides what is 'improved work'?

Let us take an extreme example to illustrate the point. What if the Mafia asked a Participatory Design practitioner to enter into a participatory project to develop technologies and practices that "improve the mafiosos' work lives" — i.e. blackmailing, drug pushing, murdering? Apparently it is not sufficient to require that the designer should improve their work lives in a participatory way, as they wish.

In order to avoid "Participatory Design with the Mafia", it is important to consider what is the *outcome* of the people's work in each case. In essence, work activities produce services to other people; a hospital produces health care services, a farmer produces food services. It is not enough to consider how to improve the work lives of a group of people from their own viewpoint only — the viewpoint of those to be served by that work should also be taken into account. In order to avoid Participatory Design with the Mafia, thus, the victims of the Mafia are to be involved in the design process. They would certainly change the design objectives considerably...

In our case, we think that the criteria for "improved work" should include that the introduction of new information processes and means into PHC must lead to improved health care services by (a) better focus on priority needs as determined by the communities, (b) more equal coverage of and access to the services, (c) increased continuity of care, (d) more informed and educated communities, and (e) cost-effectiveness of the means.

In a deprived economy it is more clearly visible than in a rich country that the purpose of a systems design project in a hospital, for instance, cannot be just to make life easier for the doctors and nurses. If a computer system in a Nigerian hospital does not even indirectly *lead to health improvements* for the population, then it is not justified. We think that the same applies even in Finland and the USA, although such issues are seldom considered when new computers are installed in hospitals and health centres.

In brief, we maintain that "Informatics for Development", or the societally justified application of information technologies, requires the involvement of a third partner group into the participatory design setting, in addition to workers and design practitioners. The communities to be served by the workers should also be involved, to ensure that the benefits are spread beyond the immediate users.

**Issues of implementation**

Tripartite partnership is not a simple thing to be implemented, and our experiment was by all means just a start. The workshop succeeded in building "an initial shared understanding" and a sense of partnership, but we were not equally successful in outlining the "vision of the future" and the way forward. That will take more time.

We have decided on four next steps. Firstly, a tripartite Task Force was established for project planning, monitoring and implementation. Secondly, the health care and informatics groups will visit the District and Ward Health Committees' meetings, to learn more about the communities' problems and capacities. Thirdly, the informatics group will study and document the existing PHC information system in collaboration with the two other groups, and then present their findings to another tripartite workshop. Finally, national and international agencies will be approached to raise research funding for the project.

It is not self-evident who should represent the communities, since all the 42,000 inhabitants of the Iremo District cannot directly participate, not to speak about the Ife Central LGA or the entire OAUTHC's catchment population. However, since PHC is a preventive approach, not only a curative one, it is clear that not only patients are to be involved but also those who may become (or wish to never become) patients, i.e. the whole community. In our case we were lucky to find a readily existing structure of genuine community representation in the form of the Health Committees. In other cases, grassroots health activists should be searched for in other civil society organizations.

In a multicultural society, language is an issue also — there are some 250 languages spoken in Nigeria. It was clearly an empowering factor that Yoruba could be freely used in the workshop. On the other hand, not all of the health providers and computer professionals are Yoruba, and even in Iremo District itself other ethnic groups are present. The mixed usage of the local language and a *lingua franca*, with interpreted summaries, worked well in our case.

Finally, we wish to stress that all the three partners of the tripartite collaboration are equally indispensable. As the early part of the Ife Project shows, in developing countries it may often be the informatics group whose participation is the hardest to be achieved. If the health providers and communities do not find capable computer professionals who are able to spend time and willing to learn from the other groups, then the potential of the computer technology

cannot be reaped for Primary Health Care in Africa. This is primarily an issue of an acute dearth of trained computer professionals in general, especially in public sector, but also of a lack of training in participatory approaches.

In the next phase of the Ife Project, in collaboration with our Finnish, South African and Norwegian colleagues, we intend to develop participatory methods applied to the specific requirements of an African country, especially in health informatics. These methods need to be appropriate for being routinely adopted by Nigerian professionals and communities.

## CONCLUSION: CAN EUROPE AND NORTH AMERICA LEARN FROM AFRICA?

The Ife Project has shown in one case that Participatory Design is not only possible but a must in developing countries, for sustained and societally justified application of informatics.

Our main conclusion is that the scope of Participatory Design must be expanded from designers and workers only to the communities which are served by the workers. We assume that community involvement is especially crucial in developing countries where scarce resources cannot be wasted. However, tripartite partnership in systems design — by designers, workers, and communities — should be relevant in industrialized countries as well, in order to avoid the risk of "Participatory Design with the Mafia". If so, the experience of our tripartite design experiment in the Ife Project may be of interest to Europe and North America also.

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