

Global Development and ICT for Building Civil Societies in Developing Countries

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Abstract

Global development has the mission to promote social change and renewal in developing countries on a scientific basis. The leading idea behind global development is to combine social changes in civil societies with economic growth and environmental (ecological) issues in order to achieve better life conditions for poor people. The main focus here is to study the relationship between needy children and exposed mothers as a target group. The purpose is to design and apply new and innovative concepts for creating five “good circles” for society building in developing countries: distinctive culture, strong identity, support oneself, organic way of living and active learning. A specific objective is to set-up professional training spaces, called Community Children Academy Spaces (CAS), based on learning workshops, modern therapy forms and outdoor activities as well as the professional use of ICT tools for the children and their mothers. Children in general are very excited and amused by working with computers! This is the main argument for setting up special ICT spaces for needy children together with their mothers. An essential outcome of ICT spaces is also to give mothers possibilities through digital media to find new job opportunities so that they can take professional care of themselves and their children. The research is done as an integrated work between concept development (theory) and field work at site (practice). The main research contribution is a new approach for managing global development for society building in poor countries based on a systems thinking and multidisciplinary research. This approach is complemented with a visibility model for project assessment based on outcome mapping. The paper will reflect on how global development and development informatics will work for needy children and their exposed mothers based on some theoretical approaches and on-going case studies.

Keywords: Global development, ICT spaces, Millennium Development Goals (MDGs), needy children, project assessment, social change, society building, special education, systems approach

Global Development for Change

Global development is the new venture for the development aid policy in the world. The main idea is to combine economic development, environmental development and social development when promoting positive change and renewal in poor countries. The Swedish Government has from 2008 launched a new Policy for Global Development (PGD) promoting fairness, justice and sustainability and thereby contributing to the UN's millennium development goals (see Swedish Government, 2008 and United Nations, 2010). The globalisation creates new opportunities for poor and exposed people to improve their life circumstances. It is therefore important to identify the different obstacles that influence the freedom and dignity of the individual human being. The PGD politics is focused on six global challenges for the development world: human oppression, economic exclusion, migration streams, climate changes, political conflicts as well as infectious diseases and other health threats.

Global development will use a well-known approach labelled "Base of Pyramid" which is perfectly timed for developing countries (Hart, 2007). This means that the new economy of the country is growing through developing the poor population to be self-dependent, productive and respected citizens. The poor people are regarded as active business partners, value creators, innovators and entrepreneurs rather than only potential producers or consumers. This view is in line with a service-dominant logic approach for society building (Lusch & Vargo, 2006). Such a global development is performed through integrating social programs with environmental and economic development of the country (see Figure 1). The goal is to align business, earth and humanity strongly to each other. According to a Base-of-Pyramid approach all development areas (or change measures) must in a future modern civil society be more integrated with different types of ICT tools (illustrated in Figure 1) such as professional use of social media, digital doorways, digital maps, mobile phones and Internet search of knowledge.

Global development has the mission to promote *social change* and renewal in developing countries on a scientific basis. The leading idea behind global development is to combine social changes in civil societies with economic growth

and environmental (ecological) issues in order to achieve better life conditions for poor people. Development informatics or ICT4D is a field of both research and practice focusing on the application of information systems in socio-economic development (Steyn et al., 2010), especially the use of ICTs (Information and Communication Technologies) in developing countries.

Creating Good Circles for Society Building in Developing Countries

For achieving an efficient global development there is a need for a major interplay between economical, environmental and social issues for improving the life situation for needy and exposed people in developing countries. The focus here is to study the relationship between needy children and exposed mothers as a target group. The main idea is to break vicious cycles or better to create good circles for overcoming obstacles and changing the prerequisites for these poor people. The good circles represent a valuable platform for creating enablers for change in civil societies and communities which is the aim for global development. We have identified five kinds of good circles for society building as a new infrastructure in developing countries which is symbolised by the Olympic rings: distinctive culture, strong identity, support oneself, organic way of living and active learning (see Figure 2):

1. *Distinctive Culture*

Promote the dominant values, ethics and morale that are prevailing in the civil societies and communities we want to understand and change. A program for global development has to be adapted to the cultural norms characterized by the local people. Therefore it is needed to gain a deeper knowledge of the region's culture and history as a base for a social change. The dominant culture in a society refers to the established language, religion and spirituality, behavior, values, rituals, and social customs (Paulk, 2008). These traits are often the cultural norms for the civil society or community as a whole. In a multicultural society, various subcultures are celebrated and should therefore be respected equally. The first good circle for

society building refers to *cultural development* as prerequisite for global development.

2. Strong Identity

Promote democratic principles and human rights for poor people in the civil society. An important circumstance is to create a genuine atmosphere of social justice, peace building and secure environments for the families living in their communities (Rawls, 2005). This represents a political dimension of society building. A program for global development should give people such as needy children and exposed mothers a genuine dignity and strengthened self-confidence based on their strong identity. As an example we can mention to organize valid ID documents (or identity cards) as official papers for refugees and transit families living in temporary communities. The second good circle for society building refers to *human development* as prerequisite for global development.

3. Support Oneself

Promote economic principles for professional enterprising and business trade. A basic idea behind a program on global development is to create occupational possibilities for mothers and families from e.g. exploiting organic plantations (coffee, cacao, fruits, and vegetables) connected to community-based children spaces. This is an application of the "Base of Pyramid" approach described above (Hart, 2007). The poor families are regarded as active business partners, value creators, innovators and entrepreneurs. The exposed mothers could be assisted by a micro finance system for starting up small businesses. Creating job opportunities for poor mothers give them the possibility to be able to "support oneself" and taking professional care of their children. The third good circle for society building refers to *economical development* as part of global development.

4. Organic Way of Living

Promote organic principles for social care in a creative family atmosphere. An important guiding-star for a program on global development is to promote an organic way of living for women and children in order to strengthen their physical health and mental capacity with ecological and nutritious food. Biodynamics is an internationally recognized approach to organic agriculture in which the farmer or gardener respects and works with the spiritual dimension of the earth's environment (Schilthuis, 2003).

In a world where conventional agro culture threatens the environment, as contrast biodynamic farms and gardens are designed to have a sustainable and sound ecological balance in a good interaction with nature. A biodynamic approach promotes efficient ecocycling and human's interaction with nature based on an anthroposophic tradition. The fourth good circle for society building refers to *environmental development* as part of global development.

5. Active learning

Promote experience-based principles for active learning in order to achieve a sustainable basic education for children and a preparatory vocational education for mothers. A leading idea for this kind of initiative is to have a situated learning situation where we combine indoors studies with practical exercises in an outdoors environment (cf. Malone, 2008a). Waldorf pedagogy is an internationally recognized approach for active and situated learning for children at school (Dahlin, 2007). The Waldorf approach to education promotes problem solving, creative learning, visual stimulation, competence enhancement and reality-based applications. An important goal for a program on global development is to work out special education programs for needy children and exposed mothers to raise their abilities for communication and concentration based on Waldorf principles for constructive learning. This approach will facilitate an "inclusive education" which means that the poor people will be supported by special education based on approaches for active and situated learning in order to include or integrate them better in the civil societies where they live – "A Society for All" (cf. Verenikina et al., 2011). The fifth good circle for society building refers to *social development* as part of global development.

Interactions between Development Areas

There are a lot of interactions or synergies between the different development areas for global change (see Swedish Government, 2008). As an example we can emphasise that exploitation of organic or nutritious foods (*environmental development*) will give possibilities for raising the learning capacity for children in school (*social development*) which later leads to possibilities for good employments and raised welfare in the future (*economical development*).

We can recognise the interactions between development areas as the relationships between cultural, human, economical, environmental and social aspects of sustainability. The five good circles according to Figure 2 is a representation of the five development areas of sustainable development for society building. The interactions between development areas can be symbolised by the interlocked connections in the Olympic rings for the good circles. Sustainable development is thus an overall concept which embraces a holistic or helical approach for building civil societies in developing countries. Sustainable development more precisely comprises cultural and human development as necessary prerequisites for a global development which in turn is an interaction between economical, environmental and social development in “third world” countries. This kind of reasoning can be summarised as follows in Figure 3:

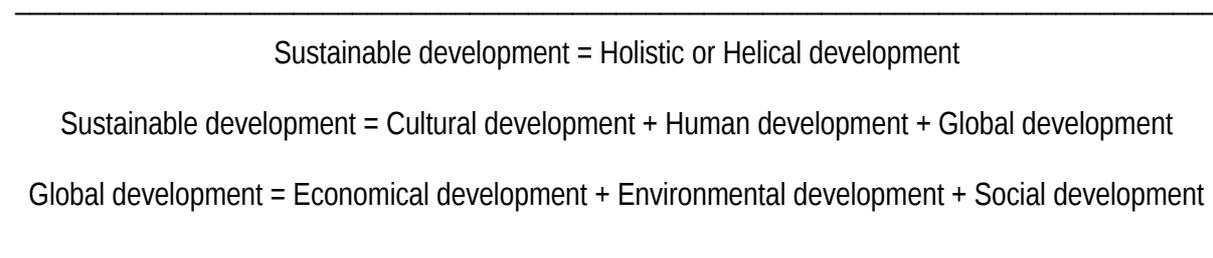


Figure 3: Connections between development areas

The design and use of modern ICT tools is today a necessary condition for success when supporting each development area with vital and critical information as well as to enable and promote the interactions between the development areas by strategic information and communication flows.

The Use of ICT spaces for Active Learning

We will here concentrate on the fifth good circle on “active learning” for society building. The goal is to create learning spaces for needy children and their exposed mothers with help of modern ICT tools. The arguments for ICT spaces for active and situated learning are as follows. Children in general are very excited and amused by working with computers! This is the main argument for setting up a special ICT spaces for needy children together with their mothers. When children are using

computers they have a possibility to develop both cognitive and mobility competence. The child can experiment, acquire new experiences, obtain stimulation, make independent choices, develop a power of initiative, become confident, increase innovativeness, practice communication, balance, mobility and concentration as well as learning how to handle mistakes. An essential outcome of an ICT space is also to give mothers possibilities through digital media to find new job opportunities so that they can take professional care of themselves and their children. This is a secondary argument for setting up professional ICT spaces in developing countries.

In an earlier research study by Nilsson & Nilsson (2010) they have worked out concepts for ICT centers integrated with social rehabilitation programs of children and mothers as a part of a country's global development. They propose that an efficient ICT space for learning support to needy children is organised in two separate sections:

(1) Multimedia Studio

A computer play center which offer pedagogical software for training and learning purposes. The primary aim is to raise children's power of concentration and ability to communicate with their environment. For all children the multimedia products gives an arena for playing activities. There exist many kinds of professional multimedia programs from serious vendors on the market. Most of the products have a two-fold goal to support the children's need for educational and playing activities. Computer games are a method of making play possible and fun while developing the cognitive abilities and independence of the child. The optimum size of the multimedia studio is around 10 fully equipped computers. Besides multimedia applications there should be installed programs for office products and Internet applications.

(2) Test Studio

A research laboratory specially designed for children characterized as "slow learners" with some cognitive disturbances. This test studio could be based on Wizard-of-Oz technique. In this kind of experiments a test person (in this case a child) thinks he writes and speaks to the computer in front of her/him

when in actual fact the test manager sits in the next room interpreting the user's commands and providing the right answers. The concept could be used for many different applications but have mainly been used for math exercises. The test studio requires two adjacent rooms with a mirror wall separating the test person (the child) from the test manager (occupational therapist). The studio also requires equipment of two specially designed computers in a network together with an ordinary digital camera for video recording of the test situations.

In the same research study (ibid., 2010) there are also highlighted and pinpointed some other technological possibilities for building up ICT spaces. One of those is a mobile phone laboratory with image-talk technology. Another possibility is so called "smarthome" technology for children with cognitive disturbances. A third possibility is using computers for creating art and music. A fourth possibility is the well-known model of "One Laptop per Child" (OLPC) for primary schools in developing countries. In the area of developments informatics there are some recent initiatives about using so called Digital Doorways, ICT Hubs and E-skills for supporting indigenous communities in developing countries, foremost in the South African culture (Stillman et al., 2010). These experiments are of great interest and utmost inspiring for creating ICT spaces for needy children and exposed mothers – as an effective tool for their empowerment and social inclusion! The leading idea behind the concept of *Digital Doorway* is to provide poor people in disadvantaged and high-needs communities with freely accessible computer equipment and open source software, enabling them to experiment and learn without formal training and with minimal external input. This is based on a concept for minimally invasive education. A Digital Doorway technology could be connected to internet access but is rather often managed through a data base copy of relevant web pages for cost reasons. A Digital Doorway concept is realized and implemented by a stand-alone solution or a robust multi-terminal kiosk as part of a "Living Lab" approach. Digital Doorways can be used for education purposes – resources such as tutorial software and encyclopedias could be installed to motivate self-learning or to support classroom learning for needy children and group learning (e.g. study circles) for exposed mothers.

Furthermore, a Digital Doorway approach will open up new pathways for promoting small businesses and social networking which is a valuable resource for organising job opportunities to exposed mothers.

In a research study by Barnett & Ashman (2008: pp. 22-23) they propose an interesting framework for the use of ICT tools in teaching young children with a global perspective. The increasing availability of information and communication technologies (ICTs) in education opens up many new possibilities for promoting the learning processes for needy children and exposed mothers. The proposed framework consists of four types of learning processes requiring different kinds of ICT tools as follows:

➤ ***Access ideas and information***

ICT tools: websites, information-based CDs-DVDs-videos, simulation games, learning objects

➤ ***Extend ideas***

ICT tools: mind-mapping software, drawing programs

➤ ***Link to others***

ICT tools: e-mail programs, online projects, internet forums, videoconferencing

➤ ***Share ideas***

ICT tools: presentation programs, intranet, word processing, animation programs

The proposed framework by Barnett & Ashman (2008) is a rather extensive description of necessary ICT use that can be applied to different education situations. It represents a constructive approach for setting up appropriate ICT spaces for children and mothers based on principles for active and situated learning.

Systems Approach for Reaching the Millennium

Development Goals

The Millennium Development Goals (MDGs) are worked out by the United Nations (UN) to be achieved from 1990 until 2015 that respond to the world's challenges for global development (see United Nations, 2010). These goals are oriented on social

transformation in development countries regarding material needs, basic education, public health, human rights, environmental protection and economic partnerships. The Millennium Development Goals (MDGs) are in this sense directed on global development for urgent change and renewal in different civil societies. UNESCO states that education empowers people with the knowledge and skills to improve themselves and their lives. The education goals of the MDGs have been elaborated and broadened up by UNESCO through defining various goals to achieve an “Education for All (EFA)” by 2015. We will here focus on a systems approach for reaching the millennium development goals regarding the need for *special education* of needy children, exposed mothers and affected teachers, as follows in Figure 4:

Millennium Development Goals (MDG):

Goal M2: “Achieve universal primary education for children”

Goal M3: “Promote gender equality and empower women”

Education For All (EFA) Goals:

Goal E2: “Provide free and compulsory primary education for all”

Goal E3: “Promote learning and life skills programmes for young people and adults”

Goal E6: “Improve the quality of education”

Special Education Goals:

Goal S1: “Achieve basic education for needy children” (see goal M2, E2)

– All children can attend the school

Goal S2: “Achieve preparatory vocational education for exposed mothers” (see goal M3, E3)

– All mothers can take care of their children

Goal S3: “Achieve professional teacher education for affected teachers” (see goal E6)

– All teachers can support the individual learning processes of children and mothers

Figure 4: Development goals for special education

We have specified three different goals on special education for the target group concerned derived from the Millennium Development Goals (MDGs) and the Education For All (EFA) Goals. These special education goals are about to create the good circle on “active learning” for society building (see Figure 2 above). The leading goal is that all children can attend the school and get a necessary primary or

basic education in a modern civil society (goal S1). There are a lot of entrance barriers for children to attend the schools in developing countries such as the following obstacles:

- The parents or mothers have negative attitudes to the children's schooling
- The family or mothers cannot afford school fees and costs for children's cloths (uniforms)
- Children have psychological traumas hindering them to concentrate in school studies
- Shortage of professional and qualified teachers
- Absence of a school place or learning space for the children in the community they live

The *systems approach* is to overcome the entrance barriers and existing obstacles. For achieving this we need to have a relationship perspective between the main actors. The child will be in the centre of attraction. The child has first of all an affectionate and attached relationship to the mother (Holmes, 1993). Many needy children in developing countries have traumatic experiences in life and are therefore characterized as "slow learners". It is therefore necessary to design special education programs for these disadvantaged children in order to stimulate their ability to communicate and concentrate in school (James et al., 1998). Also for the mothers it is urgent to have special education programs on preparatory vocational education for giving them job opportunities and making them more self-dependent in order to take care of their children (goal S2). This kind of special education should also contain coursework on social child care with health and nutrition, for understanding the children's needs as well as influencing mother's attitudes to promote children's schooling. It is a well-known fact that many teachers in developing countries need a professional support to give better services to needy children and their exposed mothers. Therefore it is necessary to design professional teacher education programs focusing on how the teacher can promote the individual learning processes of children and mothers in the best way (goal S3).

A purposeful systems solution for reaching the specified goals of special education programs for needy children, exposed mothers and affected teachers is to set-up professional training spaces, which we label Community Children Academy Spaces

(CAS), based on learning workshops, modern therapy forms, outdoor activities together with the use of professional ICT tools. It is important to utilize the existing infrastructures in civil societies. The base environment is ordinarily represented by the family home and the public or private school. But the home and school environments are necessary but not sufficient conditions for implementing professional special education programs. Therefore it is a great need for a supplementary training space where building up civil societies through Community Children Academy Spaces (CAS) gives rich opportunities for a professional education support to the needy children and their exposed mothers. Such a community space will be progressive, constructive and full of life for supporting children and mothers in their civil societies. The purpose is to raise their power of concentration and ability to communicate with each others and the surrounding world. There are evidences from earlier research that supplementary learning spaces outside the “classroom” of traditional schools would benefit the children’s physical experiences, social interaction, emotional well-being and responses (see Malone, 2008a).

In a Community Children Academy Space (CAS) there should be room for a professional ICT space as a major strategy for the special education support to the children, mothers and teachers. Such an ICT space would be based on the principle for active and situated learning as described above. A leading motive for the community space is an organic way of living for the children and their mothers. The training programs should therefore also provide knowledge on how organic nutrition and biodynamic food influence the balance between human health and the natural environment. A communal kitchen could therefore be connected to the space for serving much needed food and nutrition. The Waldorf pedagogy combines school education with a biodynamic and anthroposophic tradition. In Figure 5 we have shown a *systems approach* for Community Children Academy Spaces (CAS) as a constructive supplement to the home and school environments for the target group of needy children and exposed mothers together with affected teachers. The five good circles for society building (see Figure 2) is the basic foundation of a systems solution for Community Children Academy Spaces (CAS) where active learning and special education is the centre for attraction.

There is a need for applying a *systems approach* to be able to reach the great challenges behind the Millennium Development Goals (MDGs) set up by the United Nations and the Education For All (EFA) Goals outlined by UNESCO. A systems approach can be used for solving societal problems as a base for redesigning the future (see Ackoff, 1974). Global development and ICT for building civil societies in developing countries represent a very complex social system which is favourable to be attacked by an appropriate systems approach. We have above illustrated how it could be possible to reach formulated goals regarding special education for the needy children, exposed mothers and affected teachers involved. A genuine systems approach could be performed by action oriented researchers that have a good capability to manage such an education challenge. Therefore we argue that researchers must take over and carry out development assistance projects seriously in different developing countries. A general systems approach for society building must be adapted to the specific conditions for each developing country, development region and the community in the centre of attraction.

An action researcher has a great capacity for analyzing problem situations, finding constructive solutions and creating sustainable results by using a systems approach. Such researchers have an excellent competence to design systems with self-realizing effects. The system solution is about breaking vicious circles or better creating good circles for building civil societies in developing countries. What really counts is how we can reach the roots and causes behind the social problems and to keep away from always trying to relieve the great suffer and distress in the society; which of course is an indication of serious symptoms. The leading principle is to do the right things from the very beginning instead of dealing at the end with all system faults in the society. The challenge is to create new prerequisites and to remove the obstacles for a desired progress in society. This is called a second order change (see Watzlawick et al. 1974) or a double loop learning (see Argyris & Schön 1978). We have in our presented concept launched the idea of implementing Community Children Academy Spaces (CAS) in order to break the vicious cycle of entrance barriers for children to attend the schools, supplemented by special education

programs. The leading idea is to create a good circle of active and situated learning for the children and their mothers. Realised project programs of this kind can act as image models, illustrative examples and useful prototypes for continued and multiplying ventures in developing countries around the world.

According to a systems approach it is important to start up initiatives such as Community Children Academy Spaces (CAS) in a small scale as a platform for further expansion and continual growth – “from small things, big things grow” (from a well-known aboriginal song)! A scenario of “Mini Spaces” for special education support could be very attractive and effective as a starting point for building up new civil societies in developing countries. This idea is close to the concept of Community Based Home Schools run by trained community members in their family homes – max. 6 children per home school is the ideal. These home schools are “therapeutic units” of which schooling forms an important part (see Smit, 2011).

Social changes in civil societies are often performed in parallel with the day-to-day life in an on-going community. An understanding of the current state of the specific situation in a community gives a more stable base to create realistic changes for achieving a better life situation for the poor people in the future (cf. Nilsson et al., 1999). An important lesson learned is to use time frames when working with change processes in organisations as well as in civil societies. We have to distinguish between observing the community or society from a past situation, to a present situation and into a future situation. In practice a historical review of earlier situations or milestones when developing communities or civil societies is seldom done. At best we take care of some past experiences when analysing the present situation. From a systems approach perspective it is essential to get a deeper understanding of the situation of yesterday and today as a solid base for proposing appropriate social changes for the near future. *Understanding* before *changing* communities in developing countries should be a loadstar when building up civil societies for poor people such as for needy children and their exposed mothers.

Visibility Model for Project Assessment

The results from a project programs on global development and ICT for building up civil societies in developing countries should be assessed and evaluated by some efficient approach for outcome mapping. We have designed a *visibility model*, labelled the VERGI model, for outcome mapping (see Figure 6).

This model consists of five essential parts for quality assessment of development projects or relief programs:

1. Values What is a good life for the beneficiaries?
2. Effects What outcomes/impacts do we reach for the target group?
3. Results How the project follows budgeted costs and expected quality?
4. Goals What does the project aim and achieve by the initiative or venture?
5. Indicators Has the project green or red light for each goal indicator?

The VERGI model is a multi-level approach for following up project programs in development cooperation. The theory and practice of process management (Andersen, 2006) is applied in order to make a better use of the VERGI model for development projects. The outlined project program on global development for change with special education support is focusing on supporting needy children and their exposed mothers to give them a new carrier and progress in life. The progress for the child and mother could be measured through an initial investigation of the basic needs and by regular follow-up studies of e.g. cognitive development and health improvement where the ICT tools play a very essential role.

The expected results from a project on global development and ICT could be seen from three different angles: theoretical contributions, concept developments and practice implementations. This kind of a scientific cycle of “theory – concepts – practice” is the significant characteristic for the academic tradition called clinical research or action research (Lewin, 1947). We learn from hard field works in development practice in order to construct more efficient theories for explanations of global problem complexes and to design more useful concepts for building up civil societies for poor people in developing countries, such as the concept on five “good

circles” (see Figure 2 above). The constructed theories and designed concepts will not be workable before real life tests and concrete validations in different development contexts. Therefore a project program on global development has to perform micro studies in selected communities on regional levels in different cultural settings, such as Haiti/Dominican Republic, South Africa and Palestine. Case reports from various micro studies give possibilities for comparative reviews of practical findings from the field works.

There is a strong need for a new set of holistic theories and all-embracing frameworks on the phenomenon global development for change in poor countries based on the existing fragmentary theories of cultural, human, social, environmental and economic development of regions and nations (cf. Steyn et al., 2010). The main expected result from theoretical contributions of the research an action project is a new approach for managing global development and ICT for society building in poor countries based on multidisciplinary research on e.g. educational pedagogy, business economics, human geography, political science, health science, social change as well as development informatics and ICT4D.

Some Challenges for a Better World for All

Best practices in many developing countries have shown that basic education for needy children and vocational education of exposed mothers are necessary prerequisites for creating a “Better World for All”. Education and learning is a life-time investment for poor people and opens up new opportunities for a better future life. There are many challenges in the area of global development and ICT for building civil societies in “Better World for All”. We will end up this paper with some great challenges as a base for future research and action in the development field.

The main challenge will be to promote purposeful special education programs with ICT and by that give the children and mothers valuable *knowledge for life*. The education activities must be based on principles for active and situated learning with support of professional ICT tools for achieving a sustainable knowledge for life. A creative combination of indoors and outdoors education should be emphasised and highlighted. In this respect UNICEF has from 2004 started up a very urgent initiative

called Child Friendly Cities (CFCs) which comprise different types of civil societies such as townships and communities (see Malone, 2008b). The leading idea is that a child-friendly city should include basic elements which ensure it is able to fulfill the principles of the UN Convention on Children Rights. The rights of the child in a Child-Friendly City is characterised by active participation and social impact on society building and community life. The emphasis is to actively learn from the children and that they should influence and participate on decisions being made which have a great bearing on their life circumstances. Such child friendly societies will guarantee and secure long-term investments in education for poor people – knowledge for life! Global education together with various ICT tools can be used as a window for opportunities! (cf. Australian Government, 2008).

The efficient platform for working with global development and ICT is based on new, unique and innovative concepts for change of life circumstances for needy children and their exposed mothers in the development world. The important challenge from concept development is to create a *Global Developer's Toolbox* with professional guidelines and practical checklists for change work on individual, group and society levels. The overall model concept could be the above mentioned five “good circles” for society building in developing countries (see Figure 2 above). The importance of concept development lies in the fact that it is functioning as an effective bridge between theory and practice of development cooperation in poor countries. The challenge of designing a Global Developer's Toolbox should be based on existing scientific knowledge on using professional methods and techniques from our field business modelling and information systems development (see Nilsson et al., 1999).

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