



# INCENTIVES AND PARTICIPATION IN DEVELOPMENT COMMUNICATION

Evidence from 63 recent projects

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Economic incentives and the participation of communities can both be powerful drivers of successful innovation and expansion. This article explores a sample of “best cases” applying innovative technologies to solve urgent problems and looks into how the communication of innovative ideas for development could be fostered in order to make solutions available to those who need and might use them.

## INTRODUCTION

The first years of the Third Millennium revived old hopes and dreams. Hopes for cures for HIV/AIDS, malaria, tuberculosis; reduction of child mortality and illiteracy; stopping the degradation of the environment; increasing rights for women. Dreams of reducing global poverty by half by 2015, stated as Millennium Development Goals by the United Nations. Underlying much of the fanfare in development plans were disturbing echoes of past eras of hopes and dreams. In promoting these UN goals, several terms were reappearing from previous discourses: technology, communication, social change. But what had changed from the disappointing end of the last millennium?

Three changes in the current discourse are worth noting. First, technology today is vastly different as represented by the Internet; it is profoundly more powerful as an information and communication engine than were emerging technologies of the 1950s and 1960s of television and satellites. Second, without the deep divide of the Cold War, the UN and other global agencies are speaking more in one voice for a united effort by the more economically advanced countries in riding the world of disease, poverty and even war. Third, it seems that development groups are focusing more on hearing from the poor about their needs and of seeing a solution in their active participation.

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Beyond these positive changes, however, our present era faces at least three challenges that threaten development outcomes. First, as development economist **William Easterly** has recently commented, the top-down, highly financed crusade by rich nations to help the poor has no real incentive to create significant change but rather to make the appearance of doing so. Second, the incentives for the poor to help themselves are not available in most of these massive crash programs to quickly reduce poverty on a global scale. Third, even when aid projects are smaller and closer to the ground, there are few outside evaluations of these efforts to extract lessons and guide planning for further applications (Easterly, 2005). In short, Easterly is saying that current UN sponsored efforts are not providing incentives to poor people to help themselves. But the set of incentives may be related to the above mentioned greater participation of the poor in their own development. This article will address the issue of how modern technologies might help in smaller development projects and how these incorporate feedback and participation from project beneficiaries.

## BACKGROUND

### Data source

The **Tech Museum of Innovation** in Silicon Valley's San Jose, California began the Technology Benefiting Humanity Awards in 2000 with a million dollar subsidy from the high tech firm Applied Materials. The awards were open to any innovative application of technology that had clearly demonstrated social and economic benefit for some class of users who had special needs. The awards were made in each of five categories: development economics, equality, health, education and environment. Award nominations came from a global constituency with 1,500 entries from 2000 to 2005. Judging panels for the awards are supervised by Santa Clara University's Center for Science, Technology and Society (CSTS) with both SCU faculty and outside expert membership. Each category panel chooses five finalist projects from which a winner is picked to be announced at an awards ceremony each fall. The finalists are the "best cases" of their categories. Applications of all participants are archived at both the Tech Museum and at Santa Clara University, and are the source of the sample used in this analysis.

### Development communication: then and now

The role of communication in development has reappeared in both academic and development discourse in the last decade (see Wilkins

2000, Mody 2003, Singhal et al 2004 as examples). What accounts for this revival and how is it different from the beginnings of the field? Development communication was born with the Cold War with the emergence of mass communication technologies. Its early discourse was articulated by a variety of mostly academic writers (Lerner 1958, Schramm 1964 and Rogers 1971 are often cited in this accounting) who argued from an enlightenment model that was driven by science and technology to the exclusion of culture, religion and politics. The original paradigm had considerable power and is still an active if modified presence in development institutions. Still, from the mid-1970s through the 1980s there was a considerable pushback by those who saw the communication issues more in terms of power, economics and culture (such as Schiller 1976, 1989; Mattelart 1975, 1978; Nordenstreng and Varis 1974; as well as UNESCO's McBride Report, 1981). Despite critique of development communication projects, there was a consensus on both sides of this divide, between a diffusionist and a critical model, that communication and information technologies (ICTs) were both powerful and sometimes dangerous tools. Another addition to the discourse had a different starting point: the role of people in communication and development projects.

Participation of people in their own development fit into the two other discourses somewhat uneasily. Both the diffusion and the critical models, with their emphasis on structural, technological and economic factors, were somewhat at a loss of how to incorporate peoples' own culture, interests and goals into more macro-structural approaches. Part of the emphasis had emerged from UNDP, where communication with participants in projects was identified as critical to their success, regardless of whether communication technologies were involved. UNDP's approach, Development Support Communication, argued that in any development project, communication among development agents and participants was essential for success. This also included feedback from audiences of mass communication messages in development projects (O'Sullivan and Kaplun 1978). During the 1980s and 1990s, this emphasis on participation was articulated by many academics and institutions (see Huesca 2003 for a useful summary of academic discourse). Even so, the diffusion and critical models were not abandoned, but competed with the participatory model in both theory and practice.

In addition to developing the theory of participatory communication and its implementation, one other challenge confronted its proponents. At the beginning of the millennium, the problem of how to identify and verify the efficacy of development communication—how to demonstrate its success—returned to trouble both practitioners and policy makers. The evaluation results were mixed for both the diffusion and participatory models (Morris 2003) and, outside the communication side of development, for economic results as well (Easterly 2001). Easterly, arguing for the creation of better economic incentives for individuals in overcoming global poverty (2005),

could say of development projects in general that: “Better incentives might come from placing *more emphasis on the independent evaluations of aid projects*. Given the vast sums that are spent, reliable evaluations remain surprisingly rare”. Huesca (2003) in his survey of participatory communication research would also suggest that: “The recent attention to methodology and method may foreshadow renewed interest in conducting empirical research into participatory communication for development”.

Both the individual economic incentives for change proposed by Easterly and the participation of people in their own transformation through communication as proposed by Huesca have a common focus on how individuals and communities at the grass roots have been enabled to achieve improved economic and social benefits. Both approaches call for better measures of success as a basis for justifying their models.

## Methodological considerations

The sample of 63 cases was drawn from the 100 finalists in the **Tech Awards Benefiting Humanity** from 2000 to 2004. For the first two years, a random sample of 13 cases from among the fifty finalists was chosen to keep the analysis less burdensome; the other fifty cases was a complete census of finalists of years 2003 and 2004. The sample is drawn from mostly small technology based projects, mainly from development countries, and all “best cases”. The rationale is to have a sufficient number of cases to make some conclusions about more generalized lessons for the role of technologies in development project planning, implementation and evaluation. Often, as Huesca and Easterly suggest, there is little evaluation data available to make judgments about successful outcomes for development projects. Further, when evaluations are done, they are often of a single project whose success is hard to generalize. Or, they may be carried out by those with a vested interest in positive outcomes. This sample does not completely avoid some of these challenges, but a careful examination of data available over a wide variety of cases and environments gives a stronger basis for generalized conclusions. The author calls on a number of years of experience of evaluations of development and communication projects and their outcomes to guide him in choosing aspects that may be helpful for others in developing useful evaluation strategies.

The argument for “best case” analysis rests on several considerations: (1) the finalists were examined by panels of experts in five content areas and judged to present best practices and best results among many other entrants; and (2) the best cases are meant to suggest how success might be achieved in development practice, not to argue that many or even most projects succeed. It is clear from many retrospective looks at development

(for example, Easterly 2001) that most have not succeeded in making significant changes for people on the ground. The “best case” approach looks at the outcomes of cases where some success has been achieved and validated empirically and attempts to find some common patterns in planning, implementation and evaluation that might be useful for other projects. The methodology employed is qualitative analysis even though quantitative data are largely used in the examination of cases. The examination of the data led to conclude that some of the most successful cases were those that provided both economic incentives for sustained change and encouraged participation of people in their own development.

## CASE ANALYSIS: CRITERIA FOR SUCCESS

### Social and economic benefit

There are no more basic criteria for success in development communication than for social and economic benefit. The cases in this analysis claim a wide variety of social and economic benefits - applicants were asked to provide evidence for these claims in their applications. To summarize this evidence qualitatively, some examples will be given as an overview of the kinds of benefits achieved and their relationship to the innovative technology or its manner of application.

Each project proposed a way of explaining the benefits. Some put an emphasis on the technology itself, some on the implementation and others on the incentives.

The **Freeplay Foundation** won in 2001 with its windup radio. This innovation solved a crucial problem of using the best medium to reach the world's poor, the “old” technology of radio, in a new way. The **Freeplay Energy Group** invented a cheap radio that did not need batteries to receive broadcasts but substituted human power instead. With funds from the commercial success of this venture, the Freeplay Foundation was created in 1996 and began to distribute thousands of free windup radios to children and adults in Africa. The economic benefits are in the savings that human energy has over purchasing batteries as a source of power and the significant savings realized over the life of the radio. The *social benefits* that the content of the particular radio broadcasts can provide in a variety of situations unfortunately were not measured. The *economic benefits* are built into the savings on batteries while social benefits need to be geared to the variety of applications made as a consequence of the Freeplay Foundation's projects. Three points are worth making here: economic benefits are clear and can be easily calculated in terms of cost

savings; social benefits are more difficult to ascertain in most circumstances and the project assumed them in citing how radio had helped people in a variety of situations in Africa; and radio is still the single best medium for reaching the poorest populations (Sposato and Smith 2005).

A second example of a project with social and economic benefits is [The Barefoot College](#) in Tilonia, India. The importance of this project is in the process. The College has a strong philosophy of education and social incorporation of illiterate and semiliterate people into its operation. The specific project put forward in the Tech Award application was the installation of photovoltaic lighting in 500 villages in the Himalayan region of India. Benefits in comparison with the former kerosene lamp technology were not only economic (considerably cheaper) but related to health/environment (easier breathing and eyes freed from kerosene fumes) and educational (children could more easily study in village night schools). But the important element in the benefits was the process by which the College recruited and trained poor people to be their own teachers in the night schools and also the manufacturers and installers of the photovoltaic cells for lighting. This case illustrates both economic and social benefit in a clear fashion. The downside is in replication where the philosophy of the College would perhaps be difficult to imitate in other contexts.

A third example is that of Grupo Sofonias in Nicaragua which since 1990 has introduced [a new light but durable cement tile roof](#) that is cheaper and safer than the usual heavier clay tiles used in many parts of Latin America. The economic benefits are not only in the cost savings of the tiles (25% cheaper to purchase), but also in the diffusion of the small industrial process to make the tiles, with many small industries and local jobs created and income produced for employees. Since 1990, 660 new businesses started using the industrial process and 2,000 new jobs created throughout Latin America. The communication aspect of the project lies in the ability of Group Sofonias to disseminate the technology of roof tile manufacturing through training workshops that emphasize the quality of the final product, and through newsletters, other publications and [a website](#) to provide information and reinforce training. This is an example of how a good technical idea can become self-sustaining because it has clearly defined technical and economic benefits, is relatively cheap to implement and has built-in incentives and therefore sustainability and, through the nonprofit organization, is replicable. Worth noting is that from the beginning various donor agencies insisted on numerical indicators which forced Grupo Sofinias to gather these data. This not only helped them improve their own operational efficiency but quantitative results helped gain support from other donors and diffuse the technology and business plan.

Two other projects illustrate further challenges to evaluating benefits. The first is The [Committee for the Democratization of Information Technology in Brazil \(CDI\)](#), begun as a citizens' rights group that used computer technology to train low-income members in this technology and to promote specific interests and grievances for each community organization. Members pay a small fee for their training and membership so that each "School" is self-sustaining. The organization has diffused this basic concept in the founding of 847 centers in Brazil and centers in 10 other countries between 1995 and 2004. Since each group is self-sustaining and independent with unique community interests to promote through their training, it was impossible for CDI to evaluate outcomes other than counting the number of centers and of people trained. The social benefits of community organization, the training of poor people in computer skills and the potential for better employment or promotion of human rights are all potential benefits, but difficult to demonstrate in measurable or empirical terms. The measurable results were impressive in terms of diffusion and the participation of communities, but the more challenging issue of demonstrating precise social and economic benefit was not possible for the central organization and probably not feasible for member groups.

A second challenge is illustrated by ApproTec's (now renamed [KickStart](#)) project in Kenya to help very small farmers irrigate their parcels with a pedal water pump and irrigation system. The economic benefits of this technology are clearly demonstrated in its measurable results that show that the average purchaser of the \$38 system increased her income (70% of operators in Kenya are women) by a factor of 11 (from \$104/initial yearly income to \$1,162). But these impressive numbers are possible because of a thorough visitation system by ApproTec of a random sample of all purchasers (over 22,000 from 1998 to 2002). The advantage of this approach is that there is solid evidence for economic benefit, but this calls for sophistication and expense at the organizational level not common among most NGOs promoting development applications. KickStart is currently trying to expand its technical innovations to other African countries and to other areas of micro-businesses. It remains to be seen if the organizational structure will allow such expansion without sacrificing the careful monitoring of benefits.

By way of summary, we may ask: What about benefits' measurement for the sample of all 63 cases as a whole? All applicants in the sample were promoting benefits and presented various kinds of evidence for their achievement. Measurable results often fell short of claims for benefits, and this among a group of "best cases." Reflection on these cases suggests several conclusions. First, some benefits are clearly more easily demonstrated (e.g. voltaic lighting for night schools, windup radio power, cheap but effective irrigation systems) than others (especially educational and community social benefits). Second, funders often influence the

gathering of measurable results that can be used in improving the operation of the development organization and in gaining new funding, but this puts burdens on projects that are expensive and demanding of sophisticated design and implementation skills. Third, it is clear that some innovative ideas of either a social or a technical nature can produce immediate benefits that provide incentives for individuals and encourages participation of communities and diffuse quickly. Fourth, self-sustaining projects are often those in which benefits can be supported by participants with small fees or low cost purchases. These allow the projects not only to survive but also to expand. Finally, there may be a conflict between benefits and costs. In some cases, a project may have been successful in providing benefits, but self-sustained growth by charging participants may distort the original goals. Micro-financing works in many different venues, but is not a panacea.

## Sustainable development

Finding self-sustaining development projects is notoriously difficult. Easterly (2001) is only one of the latest to demonstrate that good development intentions often pave the road to project failure. The cases in the present sample provide some lessons about sustainability. The ability to survive may not be the only key to success, but it is certainly an important element in how we define sustainability. Survival may be bureaucratic or political and have little to do with providing benefits to participants and, more importantly, about expanding the scope of benefits to more people. Still, if a promising pilot project does not survive, it has done little good and has consumed precious resources. The question is what kind of insights these “best cases” may provide about this critical factor of sustainable development.

One way of approaching the cases is to look at how long these projects have been operating. It is obvious that those that are older are often the ones that have survived the first stage of “proof of concept.” That is, among the many applications for the Tech Awards, judging panels often rule out those ideas that are interesting but have not been field tested to see how they work with real people and how beneficiaries respond. But even among finalists, there is a distinction among projects concerning the notion of sustainability. Two kinds of threats to sustainability seem most common. The first comes from a project is externally funded and has been tried out in a specific environment for a limited period. This is a story very common to development communication projects where a pilot phase is often successful because of massive economic and technical support from outside. The proof of concept is a technical success, but is not adopted and sustained by local institutions or communities. The fact is the concept did not relate to particular environments or communities nor did it provide incentives that would elicit further participation. Fortunately, there were

few examples of this among the “best cases” examined here.

The second threat is more complicated and looks to whether the project can grow beyond a certain limit. Two examples of this challenge are from good ideas that have gotten started but must grow or scale up to be sustainable.

**Equal Access** is a nonprofit organization that makes educational radio programs for village children in Nepal and Afghanistan, with plans for India as well. It has achieved strong funding from a variety of sources in the U.S. and elsewhere and is now attempting to expand its technical reach through better satellite links and improved programming for its participants. The business model, dependent on continued funding from external sources, is challenging because it may be difficult to sustain over the long haul. It is common to many projects that there is no internal mechanism for generating revenue, because they serve a poor population that cannot afford financial contributions. The need of poor kids for education may be easy to demonstrate, but to find new funding that allows it to grow will require demonstrating measurable benefits. This in turn will call for new allocations from a tight budget to hire competent evaluators.

The second example is from a larger undertaking by the Institute for **One World Health (iOWH)**, the first nonprofit pharmaceutical company attempting to develop drugs for common diseases in the developing world. The reason for their neglect is that curing these diseases does not have a built-in profit incentive for commercial pharmaceuticals. The iOWH is built on a long term horizon of either developing their own patentable drugs or gaining access to those of for profit companies to sell at much lower prices to poor populations in need. Sustainability issues here are challenging: they need huge amounts of capital to develop their own drugs; strong persuasive powers to get other pharmaceuticals to make price concessions; a large number of highly skilled scientists to work for much lower salaries; and an ability to sustain their efforts over the many years it takes to develop, test and gain approval for selling a product. In short, they are challenging the very complex business model of the commercial drug industry. This will take great care and concentration to sustain, and it will take years to know if it can succeed.

The most basic concept of sustainability suggested above, simple survival over a given number of years, is fraught with many problems. But another issue in addition to mere survival is that real sustainability must also be related to expansion or “scalability.” Can the product, organization or innovative idea grow by serving more people?

Several examples have already been given in the previous section on

benefits. Community participation by poor people in the CDI case was an indicator that communities found benefit in their centers. The demonstrable economic benefits in the latter two cases helped increase participation and sustain the growth in reaching more people.

Other examples of expansion or scaling from the cases might be cited.

**Frost Protection Corp** is a for profit group from Uruguay that has perfected a cheap, environmentally friendly technology to protect crops from freezing and has expanded its clients from Uruguay to Napa Valley in California. **Radio News Agency 68H** that helped create a satellite-based radio news agency for newly created private radio stations in Indonesia after the fall of President Suharto in 1999 and the opening up of democratic private news centers. **Witness**, a video documentation center that trains people world-wide to use video to document human rights abuses and then uses this evidence to overturn abuses (created in 1989 and still expanding). There are special circumstances for the successful expansion of each of these cases, but in each, organizations have taken advantage of such circumstances to begin innovative work and through organizational structure have been able to be self-sustaining.

Sustainability is relatively simple to document—did the project/organization survive and grow?—but not so easy to explain. Nor is it easy to extract simple lessons from it. Perhaps the common thread in the cases cited has three general themes: first, there is a demonstrable benefit (social and/or economic) that creates an incentive for participants; second, there is a special circumstance that the organization took advantage of to serve a real need; third, using ICTs, an organization could expand. There is evidence that projects can survive and even expand, but is this the same as replicability or having ideas migrate to new places for application?

## REPLICATING SUCCESS

One important premise of the Tech Awards is that innovative ideas can be diffused freely to wherever a need arises. A second premise is that with the availability of ICTs like the Internet, the information transfer of ideas would be essentially unlimited. Looking at the record of development projects gives one pause about both premises. Although this is not the place to recount all of the failures of development to replicate all of the positive outcomes of pilot projects, the record suggests a closer look at the concept of replicability of innovative projects in this sample of best cases.

First, there is a need to distinguish between replication and expansion. CDI has expanded its model to many places and countries, but these

centers are in some sense connected with the original center in a Rio slum created in 1995 and therefore more an expansion of CDI than a replication of the concept. Most of the cases that have had success in surviving have also expanded their services under the direct or indirect influence of the original organization or project. Replication in a more abstract sense would mean taking an idea from an original application and applying it independently in another place with different participants and under different circumstances. It is difficult to do so in some cases because of patent restrictions of most for profits and some nonprofits (Frost Protection has proprietary control over its innovative fan technology; any drug iOWH would develop to treat a developing world disease would be patented). A close examination of the cases suggests that a technical innovation is usually patented and therefore not as easily replicated. Organizational innovation is an important factor in success of some finalists where the way projects are organized and diffused is not so easily copied even if this structure is not patented. The Barefoot College in India is an organization built around the philosophical precepts of Gandhi that has successfully incorporated thousands of poor villagers over 30 years into its organization. Although it has expanded, it is hard to see how it could easily be replicated.

One of the challenges with replication is the limited diffusion of an innovative solution to people who might share a similar problem and are looking for solutions. A possible approach to solving this dilemma is specifically one of communication. For example, with today's powerful search engines, it seems natural for people to search the Internet for ideas that would help people in areas like health, economics, environment etc. The problem may be for development organizations to get into the information business to reach people in need with innovative ideas for help. In the case of the innovative ideas from the Tech Award finalists reviewed here, it might be useful for the Tech Museum and the Center for Science Technology and Society at Santa Clara University to give more detail about each finalist on their web sites (see the fall issue of the journal *Nexus*). There are several ongoing initiatives for replication: websites identify in brief form a profile of each innovation; newsletters and publications give more detail in online and hard copy versions. Each summer Santa Clara University holds a **residential program for finalists** to help them develop more self-sustaining business plans. In addition, most finalists have their own web sites providing detail. There is considerable media coverage of the Tech Awards ceremony each fall that highlights the finalists and their innovations, as well as media coverage in their home countries. All of this can raise public awareness for development specialists and organizations working on similar problems. But readers of this article may be totally unaware of these cases. This suggests that more needs to be done to foster the communication of innovative ideas for development, to make innovative ideas available to those who need and might use them. There is only anecdotal information on how the cases in this sample have been independently replicated, but greater awareness

may grow as the information networks expand to more people and search engines provide more power to seek and find information critical to providing answers to problems.

## CONCLUSION

In this article, the twin concepts of economic incentives and the participation of communities in their own development were linked. In the theoretical literatures on communication and development, discussions of economic incentives are often at odds with participation and empowerment. The examination of the Tech Awards cases and the benefits they have provided suggests that, on the ground, these can both be powerful drivers of successful innovation and expansion and sometimes they can even occur together.

Huesca (2003) has argued that the participation paradigm has often been theorized in a utopian fashion or else reduced to a more subtle form of simple persuasion in top down fashion. He argues that one needs to look closer to the on-the-ground practices to see to what degree participation is working. The current analysis does not allow a fine-grained judgment about participation in development projects, but it does allow some descriptive data on the degree of people's engagement with such projects. The closer one comes to the ground, the more difficult it may be to disentangle economic and social incentives/benefits and the degree and kind of participation. There are several ways to see the projects in this sample. The vast majority of the 63 projects have as their intended beneficiaries some disadvantaged group (slum dwellers in Brazil, illiterates in rural India, garbage pickers in Indonesia, poor villagers in Nepal, HIV/AIDS victims in Africa, etc.). Most of the data for measurable impact is stated in terms of numbers of people reached and social and economic benefits produced. There is only partial evidence about community organizations and their participants in the Awards' applications.

A more theoretical argument may be made about participation and economic incentives. Since those who are identified as beneficiaries are the poor, disadvantaged, exploited etc., then one indicator of participation (though not the strongest one) is the degree of participation in the project (the numbers reached and benefited) that indicates how many people found the benefit worth their time and (in some cases) money to become participants. A second argument about participation concerns power (Wilkins 2000), and the general concern most often voiced is that a Western government or business is pushing a product or service that is not in the interest of the targeted community. A large number of the projects in this sample are represented by indigenous or at least non-

Western organizations and all but a handful are nonprofit in nature. Not the kinds of organization that obviously manipulate communities. Finally, most of the projects seem to produce benefits that do not create more divisions in communities but fewer.

The economic incentives provided individuals and communities are much easier to define and measure and have been referred to in the text. Two economic arguments are to be recalled here. First, there seems to be a clear relation between economic benefits and degree of participation by individuals. There also seems to be a rapid increase in participants who pay small fees for services of perceived social and economic benefit for customers. The latter incentives help assure the continuation of the service provided in a self-sustaining strategy. Easterly (2001) made the argument that the closer to the ground development projects were, the better the economic incentives would fit the realities of the people and the more sustainable the project. This seems to be the case for a number of the projects in this study.

There are no panaceas in development, and many failures prevent real progress. This sample of “best cases” in the application of an innovative technology to solve urgent problems certainly does not suggest that technology can solve problems by itself. Success can only come with people collaborating on both the organizational and beneficiary sides. Some few have shown outstanding success while others are more limited by a variety of constraints. The creative or innovative aspect of the projects might provide others with ideas of how they might solve their own problems. The trick is how to provide those looking for answers with the experiences of some who have succeeded in moving a few steps closer to millennium goals.

This is an abridged version of a paper written for the WCCD in 2006. For the full version including a summary of the 63 cases analyzed, contact the author.

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