A principal reason for change in urban community is that new organizations are infiltrating from the outside.

Maintaining sustainable conditions in a community requires a high standard of management. Ecological principles affecting sustainability have usually been overlooked, deemed to be irrelevant, or reduced to "green" mandates, even at the cost of significant middle-term prospects of payoffs.

Everyone recognizes that the pace of change is accelerating. Any group attempting to guide a city or a region toward a sustainable future not only must be alert to the trends, but also must use them to propel a program of action that catches up with the times. Shortages and inequities that are foreseen can be overcome by:

- negotiating alliances
- stockpiling appropriate commodities
- preparing institutional reforms

Customarily these are managerial responsibilities.

A principal reason for change in an urban community is that new organizations have become leading actors. These new organizations are catalysts for transactions in the prototype community, and most frequently they infiltrate from the outside.

In the United States a branch from a nationwide chain such as a Wal-Mart, a McDonald’s, or a Blockbuster Video comes into a community and sets up an outlet, enticing customers away from local businesses and services. At the same time these large, familiar stores attract customers from a distance, perhaps then shifting the effective range for attracting customers to another community center. Other franchises of world-class corporations also enter,
sometimes having no managers with local origins. Simultaneously the once complacent and familiar local monopolies in:

- energy supply
- telephones
- hospital services, etc.

all are suddenly faced with hungry competitors.

What is it in organizational structure itself that must be sustained in order for an organization to grow?

- Is there a recognizable pattern?

- An answer cannot be offered until its headquarters reviews typical growth of an organization situated within a neighborhood. Success there, followed by an energetic search and entrepreneurial ambitions, causes organizations to expand into other communities. Changes introduced by reorganized, rationalized government offices can also set off parallel chains of linkages.

A standard scenario for growth from within is that of a family enterprise which finds a product that is immensely popular (i.e., it offers big "wins" in the transactions between the organization and its clients). So it expands its activities and its number of participants to exploit the niche it has discovered.

At a size somewhere between twenty and one hundred employees, it starts hiring its own professional managers, accountants, and technical specialists. The organization soon sees that these niches with growth potential also exist in other communities, and it deputizes members to occupy them. It may also have to go outside the community for accounting, banking, and legal services, enabling it to reduce risk and move quickly.

In about ten years (more in developing societies), it transforms itself into a professionally managed "small-cap" enterprise, with a headquarters address most often still in the original community (see Figure 8-1).
EXPANSION OF ORGANIZATIONS

Figure VIII-1.
A successful enterprise in one community uses the Knowledge it has acquired to develop niches in other communities.

WARNING: A really good formula for providing service can be replicated more quickly than it can be imitated.
Initially some of the surpluses feed back to the founding site as a reward for taking on the risk of expansion, but later they are distributed from a headquarters set up in a major central business district. Each site in the branched organization is subject to the risks that beset the others, plus a few that "come with the territory" at successive stages in the standard life cycle. But internal renewal can occur, and some of the sites (even the whole corporation) can be "turned around" into a "reinvented" mode of organization through the vision and efforts of extraordinary managers.

Land values in the neighborhood often rise earliest. Sound familiar?

Further personnel recruitment, along with the addition of sites for operations, sales, and R&D, converts the firm into a modern, world-class corporation, with its stock quoted on one of the "big boards." By then, within its walls and intranet, it has become a "corporate community" with a subculture of its own. James F. Moore (1996) spends many pages of his book elaborating the "emerging era of business ecosystems" by describing the changing managerial challenges in the life cycle of the most modern organizations.

Family control of businesses lasts longer in Europe, even longer than in those that reach beyond the billion-dollar dimension in Asia and Latin America. Now the second and third generations of owners in these countries are set to acquire high-profile executives with MBA degrees. The "business ecosystem" that such an organization enters has a variety of strong neighborhood effects that modify land uses and the composition of populations settling around its operations. The special focus of "industrial ecology" emerges here (Graedel and Allenby 1998).

Business subsystems thoroughly monetize their accounts for the sake of efficiency, indicating that fitness to survive is determined through the "bottom line." This is too narrow an accounting to be assigned the prefix eco, as used by Moore (1996).

To qualify for eco-system, a business must reveal a complex interdependence of management with workers, suppliers, customers, neighbors, energy flows, regulators, and the natural environment. All of these contribute to development of concerted policies, plans, and programs for action, and they
speedily change direction as a unit so as to stabilize their own bottom lines. Thereby a business can hope to survive and prosper.

If a firm uses more than its fair share of non-monetized resources and services, it is not truly viable, regardless of its profits. An example of a nonviable business would be a sweatshop firm that has employees working overtime at piece rates and which pays the minimum wage but provides no health insurance. Metropolitan neighborhoods suffer from the presence of this kind of operation, as do others at a distance, and their objections may have enough clout to effect a shutdown.

Service organizations that exist alongside firms provide a larger community with crime prevention, public health (water supply), hazard reduction, education, and cultural institutions.

A list of the telephone numbers called for each of these services daily would typically range from ten to thirty. As is the case for other actors in an ecosystem, service centers have to be self-reliant but must have multiple supports in order to survive, so they are continually contacting each other.

Most service organizations prosper as new niches for productive activity are established in the community -- the "stability through diversity" argument recapitulated.
Chapter Eight  Section Two

How Schooling Transfers Knowledge for Development

Management of Governmental Organizations

Nation-states and province-states have flags and emblems indicating their representation as governmental organizations in communities. These emblems are affixed to the offices of public service organizations such as the courts and prisons, emergency clinics, and the highway maintenance crew's machinery.

These governmental organizations exist in the form of an elaborate complex of constitutional and legislative monopolies. Around the world they administer services such as:

- mail delivery
- telegraph and telephone networks
- railroads
- highways
- schools
- police
- prisons
- public health

The bottom levels of the administrative pyramid are now subject to a wave of privatization. That process aims at allowing for fewer blunders in the administration of universal services, just as business management demands fewer defects in the production of artifacts and much more flexibility in services.

- Most of these improvements are instigated from above but not uniformly, and the respective communities are ranked according to the quality and quantity of services provided. A community that falls to the bottom in overall performance, as a result of:
  - factionalism
  - cronyism
  - unwillingness to collaborate
without immediately rebounding, will lose control over its destiny.
It may be:

- dissolved
- reorganized
- split
- merged

and thus be deprived of its identity. A community without adequate government functions is without "harmony" and is not sustainable (cf. cities in Sierra Leone, Afghanistan, Rwanda, Albania, Chad, Congo, and Cambodia).

Administrators of cities that are "losers" are rarely aware of the wide impact of their decisions, and a successful rescue requires that they be sacked. Management that is merely mediocre is largely beyond external control, because its performance is not really bad. To be more explicit, let us consider the future for schools -- in sustainability jargon, the "institutions for intergenerational transmission of skills and information acquisition."

Schools have been among the last bastions for community choice (where they have not been preempted by the nation-state), but they, too, are now submitting to international standards for learning principles in:

- mathematics
- science
- hygiene
- language capability
- athletics

This trend makes it possible, with the aid of computerization, to take the drudgery out of learning, save time, and greatly reduce the stress upon their managers that is built up when submitting to standard tests.

Educators agree that schooling transmits skills in:

- acquiring
- manipulating
- using
- communicating information

but they often disagree on the sequencing of lessons, so it is left to the local principal or department head to decide what instructional strategy to use. Of course, schools generally transmit whatever information and values the ruling
elite of earlier decades prized. Students will forget much of this information and build their competence upon the rest. Dedicated school administrators are essential for sustaining residential neighborhoods for the five-to-twenty-year future, so suburban communities compete for the professional educators who have the best reputations.

Social justice demands that every child should have the opportunity to acquire the basic information and skills for participation and be encouraged to achieve his or her individual potential.

As soon as performance outcomes and methods of instruction are agreed upon, educational technology backed by computers enters the picture. New interactive features allow learning to be more self-paced than that permitted by a series of textbooks. Computers can also accumulate more of the data that make it possible to measure outcomes of the learning processes. In urban environments it appears that the share of the population obtaining the basic skills can be raised from 60 to 80 percent up to 90 percent or above, and higher levels of learning, such as the calculus, can be comprehended at earlier ages.

In other words, with technological help in education, more of the community’s children will get a thorough grounding.

Conversion of community Knowledge as introduced in chapter 2), into personal knowledge will continue increasingly to be a matter of software design, rather than teacher training. Values imprinted in new users will be determined by what people in the adult generations actually do -- the socio-cultural transactions completed that are not hidden from the coming generation -- rather than by the ideals promulgated in the Great Books or proclaimed in exhortations.

Educational technology software should not be expected to change values, although it may sometimes introduce justifications for rebellion against the hypocrisy and lies of the recent past.

Biographies of hero-administrators are scarce, however, because some of these individuals have been featured in influential films and books in the
1990s, they now have a chance to modify public opinion. Effective administrators of learning back up the teachers who enthuse about new instructional techniques.
Chapter Eight  Section Three

Roles of NGOs in Community Development

Effective NGOs: Nonprofit, Non-governmental Organizations

A community ecosystem containing organizations split between business and government functions leaves many cracks and hurtful situations.

These are patched up with improvised units such as:
- cooperatives
- faith-based organizations
- charities
- philanthropic agencies
- labor unions
- professional societies
- clubs
and the like.

These nonprofit, non-governmental organizations tend to grow in a way similar to that of the enterprises depicted in Figure 8-1, and their means of operation depend upon consultations between members and clients.

Management teams are frequently deployed after management consultants have made diagnoses for solutions of problems. An overall objective for the system is to transfer the surpluses that accumulate from time to time in the business or government sectors to the NGOs for projects that can use surpluses of capital and skill efficiently.

People lacking access to capital, skill, or health care have often been inadvertently left out of the distribution of benefits, and managers of NGOs need to pay more attention than others to special social problems and cultural interests.

Government equalizes community members by imposing taxes upon excess profits and inheritance of wealth, and forgiving taxes on most of the
operations of nonprofits. People and their profit-making organizations would rather contribute assets to their favorite charities than pay taxes.

Each of those unusual organizations has to calculate, with some indices of efficiency based upon ecological accounting, to determine whether it should survive or dissolve. The index could be special services provided that frequently have win-win properties, persons recruited into a network of believers, information disseminated to dues-paying members per unit of effort expended, or other measures. It could also be person-hours of:

- pain prevented
- numbers of children rescued
- megabits of compact, verifiable knowledge put into the public domain

The community then is asked, is the payout worth the effort?

Nonprofit and non-governmental organizations have a life cycle, including "infant mortality rates," much the same as that for enterprises. Trends among the nonprofits are followed in the Chronicle of Philanthropy, while each recognized specialty has a journal or newsletter of its own. Managers use these sources of information to keep up with unusual opportunities and risks that should be taken into account in their public lives.

Because journalists very seldom consider the contents of these periodicals newsworthy, coverage in the popular press is relatively poor.

Management skills required in nonprofits are very similar to those for enterprises, including the sophisticated use of mailing lists to make appeals to potential donors/members/clients.

However, compensation levels for their top executives tend to be much lower than those in business, because bonuses cannot often be converted into cash and quite a few of the chores are undertaken pro-bono. That is why prizes and public recognitions are more celebrated in the nonprofit sector. Popular respect and appreciation seem to be the currency that rewards these executives.

Because nonprofit and non-governmental organizations can be much more flexible than organizations in government or the corporate sector, they will be
called upon more often in future programs to overcome poverty. Many people remain poor because they grew up in cultures antithetical to both profit maximization and formal political bargaining behavior.

Africans, for example, invest a great deal of their savings from income in raising children from other nuclear families, thus building up moral obligations that can be drawn upon for support of children in the future. Neither enterprises nor banks can mobilize these savings for investment in infrastructure (Diva 1995).

Other societies use gifts as social transactions, and these transfers cannot easily be discriminated from corruption by bribery.

When public policy that is based upon income redistribution legislation and social supports seems to generate no improvement in the general level of living, it will be necessary to invent new NGOs to bring about constructive change.

The new information sector is a place to begin.
Chapter Eight  Section Four

Info-Tech for Top-Down Development

Information Technology for Development: A Novel Proposal

High levels of information deprivation are found among the poor immigrants in central city communities, and intellectuals with consciences are affected by this (Schon, Sanyal, and Mitchell 1998).

However, the greatest deprivations in the world today, and in prospect for several generations, are found in the interiors of continents and in sub-Saharan Africa as a whole. At the end of the twentieth century that isolation was expected to be at an end. Clusters of communications satellites with almost unlimited information-transmission capacity were available for use at costs comparable to those of developed metropolises and therefore easily affordable, even to the poor.

Although educated do-gooders do not have the imagination or the patience to bring computers to the people (Beamish 1998), redesign and simplification of equipment down to the complexity of television sets and household appliances began in 2000 and are expected to bring the ambitious poor to computers. For example, a few pulls on a string will generate enough power to keep a computer-television set going for an hour. The prospects for connecting the poor with the world look much more promising, and a sampling of the new opportunities can be introduced.

Conditions in sub-Saharan Africa are as depressing as any that can be found. Illiteracy is the highest in the world, malnourishment is most evident, epidemics are most common, and birth rates are the highest.

Violent, patriarchal community leaders withhold women's rights, and income growth has been stalled, while governments fall victim to military juntas. The hopeful sign is that women are increasingly finding ways to self-organize and are creating energetic groups dedicated to community improvements. Millions of them in the markets have recently learned to become effective micro-
entrepreneurs, and the few that have obtained secondary education are demonstrating the capacity to become competent middle-scale managers.

How can this newly emerging phenomenon be combined with the globalization of information technology to obtain a feasible developmental path for communities?

It is important to note that the normal path of high technology, when introduced into the least developed countries, reinforces the ruling cliques. A direct example, reported in a recent management text (Moore 1996), cites the existing communications satellite connections for long-distance telephone service.

Two dare-devil American techno-entrepreneurs wanted to create a path-breaking startup firm.

To minimize competition, they set up in one of the riskiest places on Earth -- Somalia immediately after the United Nations forces had pulled out. Into the chaotic aftermath of famine and civil unrest they arrived with portable equipment, and started a business in the top-ranked hotel in the leading city. They set up a satellite link to a teleport in Norway, and from it were enabled to enter the telephone systems of the developed world.

Their customers in Somalia included:

- munitions merchants
- elite families with students abroad and relatives working in the Middle East
- desultory representative from diplomatic services
- traders' collecting back-country produce to be exported by dhow

That arrangement enabled a quick cash flow for the American entrepreneurs and expansion of their telephone service to provincial market towns, factional politics permitting.

Thus the rich and powerful families monopolized the use of the telephone service, which enabled them to maintain control of the:

- walled towns
• the water sources
• supplies of hard currency

Meanwhile, the poor rarely received even the medical supplies that had been shipped from donor organizations to meet their needs. Somalia could be reconnected to the world by ultrahigh technology, but the "trickle down" effects would be too slow to prevent repeated famine and other disasters.

Later expansions of their firm into neighboring countries did not vary the formula. A better approach to entrepreneurial management needs is being innovated.
In Africa, women, who also prepare and serve it, grow 70 to 80 percent of the food for families.

The principal crops are:
- maize
- wheat
- sorghum
- beans
- ground nuts
- manioc

Out-of-the-way districts affected by drought and civil war have been depending increasingly upon relief shipments of grain and cooking oil drawn from world stockpiles.

Experimental stations in Africa have been working on efficient ways to:
- irrigate
- use fertilizer
- ward off pests

but their findings have not been communicated to the illiterate women hoeing the fields. Their inability to communicate with the growers means that most of the findings of these stations are academic and irrelevant for conditions faced by farmers, even in peaceable times.

But now, in the 21st century, we can visualize the delivery of crop-growing simulation exercises to convey messages to growers in the fields, using visual images with spoken words in their own languages. Initially these programs should teach farmers how to adapt to exigencies, such as drought and mass infestation, but,
- quality control
- optimization processes
- tradeoffs
can come quite soon thereafter. Some families in villages and towns already have battery-powered radios, on which they hear dramatic "weepies" serials that advertise local services. Most of the poorest families have become acquainted with radio through visits to relatives who own sets, and quite a few have even experienced television.

Presentations by digital video disk (DVD) could be set up initially in electrified shops or any of the hundreds of clinics sponsored by the foreign missions and international public health groups, which have independent photovoltaic sources of electricity. The DVD medium is already known in most towns, often in the form of pay-to-play games. They are likely to find a sizable early market, along with music and commercial entertainment.

Once designed, DVD simulations of crop growing would generate a lot of new talk among villagers. Ideas would be circulated about how to stay ahead of the weather gods, and a substantial increase in food supply could be generated within a few years by eliminating faulty practices in irrigation and fertilizer application.

Public, NGO, and private organizations, depending primarily upon local skills and trustworthy management available could provide DVD presentations.

In subsistence cultivation the new educational technology should find a highly productive short-term use. Preliminary market analysis suggests that it will take three to six years to produce the programming for simulations and a little longer to produce extra food. However, an immediate demand already exists in rural areas for digital telephone services that requires the same infrastructure.

Mobile pagers, portable telephone service, a site for offering television programs, and simulation games on DVDs (Box 8-1) would help pay the rents.
Box 8-1

How Info-Tech can Stimulate Development in Communities

Information Technology for Accelerated Development

Management systems that have direct impact for social change in outlying areas, as contrasted to glacial "trickle down" processes, can now be designed. The new communications satellites that connect points on the Earth’s surface with a network in outer space can be linked to stations powered by solar energy in isolated villages. Micro-enterprises that manage these stations promise to be profitable from the start when offering links to the urban networks. In a few years a village site can be elaborated into a microcomplex of commerce, education, and modern culture within a matrix of tradition.

Highlights of such a design are presented here in a way that fits a promising strategy for development in a variety of very poor communities. The following scenario starts from a typical franchise site in an area hitherto lacking telecommunications access. Think of sub-Saharan Africa, but the formula fits at least a billion people in the world. Hundreds of different languages, and as many subcultures, could be involved, with minor modifications.

The telephone is a device that seems to be pure magic, but its use can be learned quite easily by preliterate adults who are able to express their purposes and feelings verbally. The preponderant majority of the next telephone users are women. The instrument is also incredibly useful for creating new, nonpolitical service organizations. Economical digital telephones of good quality, each weighing less than a pound, can in the near future function anywhere on Earth. Pagers and fax machines of a kind that became very popular in the back provinces of China can accompany them. In telephone conversations in developing countries, highest priority is given to affairs of the lineage and the extended families--death, funerals, births, estate settlements, transferring
children needing support, and celebrations. Newspapers report that women’s groups in Tanzania communicate this information using existing facilities, and their organizations offering telephone services combined with photocopies, plan to expand to two other developing countries blessed with strong NGOs. Empowerment comes with sharing the telephone, entertainment for the family arrives via the television, and understanding the surroundings from the educational recordings.

Business and transport organizations quickly develop a dependency upon telephoned arrangements, thereby preventing much spoilage and waste of produce while saving scarce motor fuel. Early anecdotal experience from the interior of India suggests that cash income will rise disproportionately quickly at a rate of 10 to 20 percent per year in isolated villages, because of the coordination of social, economic, and cultural activity through telephone use.

Why not set up a franchise telephone communications system with sites at strategic non-metropolitan locations to offer humanized services? Twenty thousand dollars worth of high-tech equipment could be placed in a secure, locally built shop that would initially offer simple telecom services (Figure 8-2). Children could be the couriers announcing arriving messages and requests for telephone callbacks, and fax service could be added for literate community members with ties to modern organizations. The service could be one-way at first, in or out, and messages could be recorded to make them trustworthy among members of a predominantly illiterate society and still affordable.

In an African village a high roof could protect stored water. A tall pole above it would support antennae for cell phones in the district and panels of photovoltaic cells to power the equipment and fluorescent lighting. Batteries would be charged to cover night-time operation. Electric energy storage could also support an outdoor television set for which seats could be sold or auctioned for evening programs. For education and entertainment,
DVD viewing capability can be made available at 10 to 20 percent of the cost of books, magazines, or tapes.

The operator of the franchise could be a woman with experience in the urban market, partly because she may wish to barter services for produce to enhance the business among the very poor. It could also be otherwise unemployed new graduates from technical institutes and rural colleges. The franchise-sponsoring organization would first design and test a standard facility for that region. Imported equipment and supplies can be deployed from the regional center, where the training of the operators would also be conducted.

Expected foreign currency cost of ten thousand to twenty thousand dollars is well within the value of the inventory for an established commercial shop in those parts of the world. The value of the structure, built according to local traditions to be secure, would be about the same, but in local currency. Its antenna could supply signals to non-electrified large households and hamlets within a radius of ten to thirty kilometers to be captured by windup devices as well as batteries. Interdependencies with truck and bus enhance the early delivery of orders by telephone, so express services become possible. The connections would need to be negotiated as experience accumulates.
Figure VIII-2.
A franchised center would cost about $10,000 for equipment about the beginning of the 21st century, and a secure shop might cost the same amount, but in local obligations. Heaviest users at the beginning would be property owners, traders, migratory skilled workers, and students, but later almost everyone would become a customer, especially for the telephone. It would employ 3-12 people at startup, plus couriers. Seats for TV could be auctioned to families.

Hi-tech can penetrate the back country, and make a profit!
The Communications Satellite Planning Center at Stanford University used engineering design methods (Lusignan 1999) to meet the rural communication needs in a dozen isolated societies. They arrived at the same capital requirements and service costs without knowing about the prospects for another function that could easily be filled by a telecom shop: provision of pure water with very low energy expenditure (Gadgil 1996; Gadgil and Shown 1995).

Potable water would save money and effort now required for fuel-wood to boil the water. It would also produce a daily flow of potential customers for shops in the vicinity of the communications relay station.

Government involvement in such a station is unnecessary, but officials will probably demand a large share of the prospective profits in exchange for inspecting and legitimizing the operations.

Precedents for minimal government intervention are already being set by the rapid expansion of mobile cellular telephones in poor metropolitan regions. Governments in poor parts of the world have found that the foreign telecoms companies, bidding for the right to install a telephone service, refuse to make a deal to invest, if the conditions are not transparent and clean of corruption.

If greedy authorities delay service, the politicians are discredited in the eyes of the public, especially the elite. In this almost unique instance, the political situation favors the deprived masses, because the powerful people also want this handy new device.

Therefore, the convenience of newer, cheaper telecommunications devices tends to exert social pressures to overcome small-minded political deadlocks that frustrate their licensing initially. The uses for food production usually follow unplanned as opportunities arise.
Chapter Eight  Section Six

Multi-Service Communications Center

Creating a Communications-Based Human Services Center

An important feature of information technology, when introduced into a traditional society, is that its facilities attract many existing human services.

- Translations and letter writing break the barriers between local speech and the formal languages, maintaining links with members of a family who have found employment at a distance.
- Passenger transport reservations and schedules are equally important.
- Money-changers cashing the pension checks and the remittances will want to be nearby.
- Photocopy machines provide documentation for correspondence with separate households.
- Quotations on current market prices for produce can be exceedingly important during harvest times, and also notices of temporary employment on construction projects in between.
- News about epidemics and available health services will sometimes be critical.
- A lending library and school functions would find it very convenient.
- Quite unexpected henceforth, is a supply of sterile water produced from filtered water with the aid of the batteries backing up communications equipment already mentioned.

In this role the center takes on the functions of the village well, recognized from biblical days as a magnet for women and children that promote a high rate of social exchange.

Soon major future activities will be attracted to the communications center -- for example, education. Rural women are rightly concerned that girls tend to be left out of state-provided schools. Strong preferences in these areas for educating boys seem logical to traditional residents, though they are short-sighted in the longer run. Private schools not significantly more expensive than
their public equivalents stretch to meet the total demand in the towns, but with some telecom connections, they can reach some villages.

Significant trials were begun in India in the year 2000.

One was based upon the unused capacity in the installed communications system required for the operation of Indian Railways. It was offered a five year start with 90% subsidy by the Government, and is thought of at the Indian Institute of Technology at Chennai as proofing the technical equipment and systems design for bringing the new capabilities to rural areas.

Tightly organized cooperative farming groups in dairy and sugar were already prosperous, but they could foresee considerable efficiencies immediately attainable with better communications. (Business World, May 1, 2001).

Earlier than expected, a complete systematic scheme for employing that new capacity has appeared.

DEVELOPMENT ALTERNATIVES, an NGO based in Delhi, started already in 2000 to offer Internet-based services to small scale production units run by local people, and to aid:
- artisans
- small cooperatives
- minor entrepreneurs

It had proved its technical competence, in 1994, by providing email service to non-profits headquartered in the National Capitol Region.

The formation of an active “mother” portal to the Internet was announced in December 2000. It is designed to greatly enhance the efficiency and coverage of allied organizations, great and small.
NGOs Using Info-Tech

Development Alternatives and TARAhaat dot com

website for Development Alternatives: tara@sdalt.ernet.in

The client base of TARAhaat (TARA represents Technical Assistance for Rural Achievement, while “haat” is Hindi for “exchange”) is deduced from a sample size of 20,000 households in 131 villages in a survey sponsored by UNDP. The range of concerns it expects to find as a source of income are listed as follows:

INFORMATION:

• AGRICULTURE
• EDUCATION
• WEATHER

GOVERNMENT SCHEMES:

• COMMODITY PRICES
• WATER SUPPLY
• LAND RECORDS
• PHOTOCOPY
• WOMEN’S INTERESTS
• YOUTH INTERESTS
• KIDS CORNER

NEWS:

• SPORTS
• MATRIMONIALS
• PEOPLE RECORDS

It starts servicing business-to-consumer transactions (B2C), but intends to evolve quickly the business-to-business traffic (B2B), and supply email connections between craftspeople and their customers (C2C).
Although it started as a dot.com, its aim was intended to make only enough profit to finance rapid expansion, so the dot.com suffix was dropped within a few months.

TARAhaat franchises the village center as a TARAhaat.kendra, a valuable micro-enterprise that offers the local e-services.

TARAreporters and alliance partners continually update information from markets, weather services, and health service conditions.

TARAgurus will teach and advise enterprises on how to get full value from services offered on the Web.

Soon TARAabazaar with TARAvendors will be able to provide the countryside residents access to urban goods and services, and TARAvans (some will be oxcarts) would assure delivery (fulfillment of transactions).

TARAcards will offer microcredit for online purchases. Education can be extended through already existing Open Schools and Open Universities, which are commissioned to provide teaching, testing, and certification to rural areas.

Startup requirements are modest, with 50% backed by an overseas non-profit group.

Twelve kendra were launched in the first three months.

Several surprises were reported from the first few months of operation (Development Alternatives, January 2001) The first was noisiness in the national network of call stations, which on paper seemed like a decent solution in many locations, but which quickly led to substitution of local antenna linked to a communications satellite.

The second was the temporary confusion caused in the minds of low caste people when they were, very democratically, invited by TARAhaat youngsters to participate in an activity that looked like it would be reserved to the upper castes. After all, the livelihoods of the poor were dependent upon the good will of those born to higher stations.
Another was the astonishment that it was not free, but cost Rs 40 per hour of computer time. This was not a government program, and it was not visibly subsidized, but people had not seen this before. To free up expectations, the operators of the kendra have introduced an educational program. Wisely, they chose to start with demonstrations for the children and youth, and soon had them explaining the merits of the new medium to their parents.

State governments of India, along with the largest corporations, have become publicly very committed to info-tech in the past few years, very much the way they embraced electric power at the time of Gandhi 50 years ago.

Currently their major concerns are with the recording of land transactions and pensions, and the elimination of corruption in applications for licenses. So, the states sponsored VSATs (Very Small Aperture Terminals) for their offices, multi-service centers, and kiosks. They rarely funded pilot demonstrations for providing village services, such as agricultural commodity prices, educational opportunities, and email connections with family members working overseas.

This introduction of a new technology by the state is a top-down approach that has been exploited by publicity-seeking Indian politicians, who encumbered it with much mismanagement along with vote-buying.

A descriptive survey of the prospects of information technology assembled from state and national sources by the Associated Press in January 2001 completely overlooked the TARAhaat.com startup described above, because it had avoided the taint of political connections.

State and federal acceptance of hi-tech will push forward applications in the metropolises and state capitals, where aggressive units within the staffs and bureaucracies will use the power of information technology for competitive advantage. The bottom-up stimulus for development has been slowed in cities, because cell phones were not affordable to struggling young Indians.

Early success for a program in the villages, on the other hand, could discover the talented individuals and accelerate the current development process at least two generations, and simultaneously reduce the burden of population growth.
Success of the Green Revolution has enabled India to accumulate food stocks sufficient to tide them over two successive failures of a monsoon, which should not happen more than once in a human generation.

Its education system is established and gaining international respect for producing high quality software engineers and related professionals. In addition, there is no felt threat to public order.

Although the poor do have considerable difficulties obtaining their constitutional rights, guerrillas regularly disturb only the Northwest frontier, where they are supported cross-border incursions. Therefore, using the Internet for civil defense or terrorism has not been suggested publicly.

Among other unmentioned possible uses is fostering the spread of the details of self-help services. The south African social planners developed a process for having communities that had solved water supply, electrification, sanitation, roads and similar problems serve as a consultant to other still struggling to make those improvements.

The Internet could expedite communication for planning the first visit and troubleshoot all the way to the dedication of the completed project. In that way local successes can be multiplied rapidly while technical experts remain scarce. There are other major contributions to consider in the near future.

**Gift-giving Exchanges.**

One of the first major contributions of information technology has been a revolutionary transformation of markets, typically reducing transaction costs by two thirds, but often much more.

Where markets have not existed, the savings can be much more. Experiments need to be undertaken that connect donors with recipients.

Donors in rich countries have built up mental images of worthy recipients, so they and their representatives spend a great deal of time and trouble in chaotic political environments seeking them out. At present the overall cost of giving to not-yet-developing communities is estimated at 50-90% of the total
donation. Then consider the predicament of the recipient who has little choice
over the nature and the timing of the gift. This exchange process is indeed a
“clumsy market in good deeds.”

The Internet could mount a Global Bulletin Board to expedite small gifts
($1000 to $100,000 value). Huge improvements in targeting and management
could be expected in a short period of time.

Experienced assistance organizations operating worldwide, such as the Global
Fund for Women, a leading edge innovator, and Oxfam, with a history of long
term on-the-ground involvement, are needed for design. They are sensitive to
maintaining their present financial supporters, as well as client relationships.
The quickness of communications between donors and recipients is a
reassurance that the funds and items will arrive in time and be put to a worthy
use. The sums already allocated to help can do 2-3 times as much good, mainly
by reducing the impacts of small scale disasters.

Micro-Enterprise Formation.
This idea is already a recognized success, but it has a much greater future as
it gets streamlined.

Very small production units and traders have always been around, but entry
was blocked to women, races, religions and ages for reasons that have nothing
to do with social effectiveness. The genius of the Grameen Bank has been to
mobilize the initiative of rural women, backed by micro-credit and strong
support within small groups.

That effort would have choked long before enrolling a million borrowers, due
to records-processing bottlenecks, were it not for female bookkeepers in a
“male” occupation. Starting from computer manuals, they designed programs
enabling further expansion. Such techniques, backed by clever team
organization, have grown into a social movement that is taking root in many
countries.

The cell phone added to their range of activities, but a local village webpage
can speed up and record their transactions, thus adding eventually to income.
The amazing collateral effects on the society at large have been documented earlier. Micro-entrepreneurs are protective of their business, as evidenced by their reduction of fertility by 40-50% below a level previously achieved by a strongly supported national family planning program.

Entrepreneurs knew that a pregnancy greatly adds to the risk of failure in business. It is also highly significant to note, when considering population balance strategy, that other women in the same village who were not micro-credit borrowers, also reduced their fertility, while those in neighboring villages remained unchanged. This influence on fertility choices would be very important for sub-Saharan Africa, where population growth is even more rapid.

**Famine Prevention.**

Thus far the new knowledge acquired in the agricultural research stations that led to the Green Revolution has not diffused to the least educated farming communities living at, or very close to, subsistence levels, while population has been growing 2-3.5% per year, resulting in small to medium famines.

Large famines now get enough attention to attract shipments from global stockpiles. Better communication can attract help, but it is even more advantageous to use the channels to transmit information about better food production practices.

China is pioneering a combined reporting and simulation strategy for food supply enhancement, but the government-managed organizational responses imbedded in their simulations are very different from those encountered elsewhere in the world. Growers in other very poor societies need to:

- find good seed
- treat it to remove blight
- cultivate the soil and water when needed
- stop the parasites lurking in the soil
- zap the bugs
- pick off the caterpillars
- scare away the birds
• hoe the weeds
• know when to harvest
• know how to dry the crop
• frustrate the rats before they steal it
• transport the surplus to market
• drive a good bargain

After that a score should be posted, for expected returns, and suggestions can be offered for improving the next time simulation game is run. Those hints are worthy conversational topics with friends, so the productive ideas are disseminated more than the stories of frustration they replace, and the ideas diffuse to the next generation.

Interactive Education.
A very large share of the world's educational deficit resides in these poorest rural societies.

In high fertility societies they are so strapped for funds that the existing schooling system often cannot expand fast enough to fill an expanding gap.

The affordable alternative--small group learning in a workshop aided by interactive recorded exercises for most standard lessons--can add images, icons, and audiovisual sequences to text and numbers, contributing both practical knowledge and higher concepts. Yet most of the poor will deem such education second class or worse, because it does not resemble the schools that educated the important people in the community. Therefore the amount of learning should be recognized through new types of stress-free internationally sponsored tests.

Programs for DVD disks translated into the hundreds of languages spoken in the villages are needed to push every child through the elementary grades, and moving on to the dozens of market languages for the upper grades before they can reach the computer languages in high school. The faculties of the local teachers colleges and universities are eager to start producing the teaching materials and exercises.
Culturally appropriate practices can also be drawn upon. In much of Africa, for example, acquisition is accelerated by a kind of "whole body learning", applying song, mime, dance, and drumbeats to emphasize the communication, and make it more memorable. The rhythm and the melody reinforce memory of rules for such procedures as long division to the identification of common plants. Digitization of photography, that speeds up the production and distribution of understanding when starting from a stage of extreme knowledge deprivation is already popular in the cities of these countries. An early version of such a learning center oriented to small groups that greatly extended the capacity of a trained teacher to produce competent students was seen in out-of-the-way Lesotho.

Franchised units could be put into place quickly, once the bulk of the lesson content is available. They can be coordinated and maintained through the village communications center.

Through telecommunications, an alternative course of education can be provided in appropriate languages, managed by women's NGOs and entrepreneurial teachers.

A teacher can learn to instruct up to one hundred students at a time in a learning center (as compared to the normal fifty or sixty in a classroom) with a junior assistant and the aid of equipment and interactive software in thirty to fifty stations.

Students can get instant responses to examinations and be told impersonally from the computer program about areas in which their level of achievement could be improved, so as to preserve their esteem. They would no longer have to wait months for the verdicts of external readers. Such learning centers is often set up by religious missions, but they do their best to make the schools self-sufficient financially as soon as possible. Superior marketing provides what is believed to be a modern education, because it can compete in city life.

If the telecom shop was not attached to a clinic or medical center at first, the telecom center, with its photovoltaic power and pure water, would attract providers of medical services, both traditional and modern.
Family members usually accompany the sick during treatment and recovery periods to help prepare their food. When villagers cannot take them into their homes, a hostel is likely to be set up. Within five to ten years after a telecom shop is set up, an integrated cluster of human services and part-time shops is anticipated. Largely women and their NGOs would manage them, but some would be commercial shops. The natural environment could recover from the impact of excessive fuel wood collection at the same time, due to a reduction of the need to boil drinking and cooking water.

So far only reality has been described—things happening or planned for prompt application. The new services associated with the introduction of the Internet have either been started, or they have been considered with a local context for early introduction. They are not fantasy!

Newer developments that build upon the above are more imaginative, and therefore less credible, may have greater impact upon rural life in the long run. An example of what is already technically feasible, but not known to be implemented, can liberate personal outlooks of both men and women, but children to an even greater degree because of their heavy dependence upon visual imagery (Box 8-2).

Community improvement in these least developed regions is exceedingly important for the world as a whole, because it addresses places where a population explosion continues almost unabated. Free contraceptives, without a motivation to use them, have little impact, and even the introduction of female literacy, which is gradually becoming effective in much of Asia, yields fertility reduction very slowly in the family structures common for Muslim and African societies.

On the other hand, the impact of micro-entrepreneurship, with micro-credit for women backed by support groups, which also motivates reduction of birth rates by as much as 40 percent within a few years, even in a Muslim society (Bangladesh), has already been noted. Secondary education for girls can accomplish an equal reduction in population growth. Moving to the city seems to have a slowly increasing influence enabling fertility reduction.
Looked at from the bottom up, voluntarily chosen, public-oriented educational activities are almost always "interesting," or at least not fruitless, and for this reason they offer the best hope for population control and enhanced quality of life. Women must constitute most of the leaders and managers who make these changes happen.

Management for NGOs involved in community development combines small-scale grants and loans obtainable from the other side of the world with local efforts and program planning. At the moment, the process has very high transaction costs and inadequate oversight; most of the funds go into administration.

With the Internet fast becoming universally available, a much larger share of donated funds can go directly into the action in the field. Then project requests coming from the less developed regions can be posted on an electronic bulletin board with a request for "bids," and the foundations, associations, and donor agencies can identify those that fit their ongoing programs and current policies. Once the two parties -- community and the international program provider -- find each other, they can bargain over the Internet about details. Win-win resolutions of differences in procedures are much more likely to occur than earlier, and they can be implemented promptly. Therefore, system performance rises strikingly with direct international connection.

Lastly, feudal governments and dictatorships plague very poor countries. It has already been argued that new non-profit organizations moderate the raw struggle for personal power by adding to the number of stakeholders that need to be consulted before undertaking a coup.

With accelerated education we see that violence diminishes, and a political order more closely resembling a democracy can take root.

Information technology put to work in the fashion described here, and managed in large part by the women. Is thus much more likely to be productive of welfare than any alternative available.
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