

Interventions for reducing risk In village ICT business implementations

Executive Summary

Jhai Foundation proposes to work collaboratively with leading stakeholders in five countries to reduce risks through developing project-specific business and community development tools, training trainers and trainers of trainers, and sharing a communication tool that will help village entrepreneurs network and do peer-to-peer technical support. Jhai Foundation has worked eight years in the ICT and rural development field and has won multiple awards and 'best practices' designations. Lee Thorn has 35 years experience in building movements and in practical economic development and strategic planning.

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Background

All Jhai village projects have made money for villagers for years. Jhai Foundation will work with leading partners in India, China, South Africa, Brazil, Vietnam and Laos to reduce risk in economic development and ICT schemes. Jhai will collaborate on design and implementation of project-specific tools and training processes for 1/village-level financial sustainability, 2/training and practice in participatory community development, and 3/sharing of a communication tool that will help village entrepreneurs network and do peer-to-peer technical support.

The successful examples of scaled, social entrepreneurial projects that include use of ICT have one thing in common¹: **hub and spoke models** – with the hub providing administrative and technical support functions. This model is central to India's plans in various configurations and is under consideration elsewhere. What Jhai Foundation can do is reduce risk as this model is developed and implemented. Profitable projects of this type are exceedingly rare.²

Since 1998 Jhai has conducted **successful action research** in rural ICT and development in Laos, a least developed, war-torn, communist country. The chairman of Jhai Foundation, Lee Thorn³, has been involved for over 35 years at top strategic levels in two worldwide, self-help movements that have created great social change: the Vietnam veterans movement for peace and the Independent Living movement for people with disabilities. This is unique institutional and personal experience and has led to many awards and huge press for Jhai Foundation.⁴

Jhai Foundation created **best practices, systematic** solutions:

- profitable, self-sustaining, community owned ICT educational and business projects in rural high schools and Fair Trade Jhai Lao Coffee Farmers Cooperative (2000-present)⁵,
- hospital supply inventory control in a community which had never used a computer (1998-present) with subsequent adoption at the national level in Lao PDR⁶
- the low power, rugged, inexpensive Jhai PC prototype and communication *system*⁷ built for remote environments with no, little, or inconsistent electricity (2003-present)
-

Our method is always participatory and empowering.

Jhai's assumptions

Jhai's goal: lower risks inherent in CSC Scheme's village activities and in 4 other countries

Impact: 2006: test systems 2007: 100,000 villages 2008: 240,000 2010: 640,000

We start with India. Key technical issues remaining are energy, keeping networks up, the need for and cost of redundancy and technical support. All relate to hub and spoke solutions, low power computing and Linux as parts of a scalable solution (please see Appendix A). **The gating issues, however, are not technical. They are managerial.** We assume:

- Local business models and business accountability are preferred modalities globally. Local businesses in rural India tend to run at least 12 hours/day to be profitable.
- People adopt what meets their perceived needs. Generally poorer people want to make more money while keeping their traditions. This translates to goals that better current life (enhancement of earnings from farming, crafts; health services, entertainment) and the lives of children (education for children and moving adults from unskilled to skilled).⁸
- People change their ideas about needs in rural areas mainly through face-to-face conversation with one another and outsiders they trust, especially relatives.⁹ A choice to use ICT is not trivial for poorer people and must be cultivated through participatory development.
- Solutions must be subculturally and language sensitive as possible. Over 95% of rural people in India do not speak English. There are at least 250 languages spoken in India. This kind of distribution in rural areas of English and other languages learned during colonial times is generally true globally.
- ICT can be seen as a community asset no matter who owns it, like the phone network.
- Very local leadership drives. Entrepreneurial talent – shared equally between men and women in ownership positions - is critical. These leaders must be chosen carefully,

trained for leadership as well as technical and business skills, and be given status through training.¹⁰ A critical aspect is training trainers of trainers using world class talent.

- 100,000 villages' physical and training logistics require expert help, probably from Indian senior officer veterans.¹¹

Jhai Foundation proposed activities: Minimal interventions, maximum impact

We propose to work only in areas where we have decades of experience or specific experience in financial sustainable ICT and rural development. This work is meant to supplement other 'best practices' work of many kinds in each locale. We do believe, however, that the services we provide reduce risk most.

- 1. Developing business development tools based on documented Indian best practices:** Jhai with Mission 2007 with Indian partners will facilitate multi-leveled (video, quantitative, qualitative, participatory) documentation of four 'best practices' organizations' village work. Tools will fit the challenges specific to Mission 2007 and build on Jhai's proven training models and business building tools (see static version of Jhai infinitely variable business planning and financial tool in Appendix B). This kind of localization will be carried out in each country where we work. **Impact:** *Accurate, multi-layered records of good, early implementations will provide raw materials for many uses. Tools built on local practitioner experience and provided pictorially - with appreciation of learning styles and languages - are most likely to be used in other localities.*
- 2. Training of business trainers:** Indian partners with Jhai's help will teach business trainers how to use tools and training processes developed with 'best practices' organizations. **Impact:** *The only way to reach 100,000, let alone 640,000 villages, even given the layers envisioned in the CSC Scheme, for example, is through a training of business trainers program. The tools for village implementations must value local knowledge and acknowledge local business expertise. Traditional farmers, for example, come from many generations of people who must control inputs, account in some way for costs, and do projections based on histories, in order to maximize profit.*
- 3. Training of trainers in participatory community development:** Based on Indian experience in (1) and (2) above and award-winning experience in Lao PDR, Jhai will work with Indian trainers of trainers to create opportunities for simple village led needs assessments and participatory processes that lead to intensive community participation in the entrepreneurially driven solutions. **Impact:** *Jhai 'best practices' designations and awards have primarily to do with our proven participatory assessment, planning, and implementation methods. These methods will be tested in early implementations, codified, and then taught to trainers of trainers with simple, pictorial tools shared for use.*
- 4. Training of trainers of trainers in key mobilizing skills:** Based on extensive experience in creating organizations of community organizations in India, South Africa and 42 other countries, Jhai trainers will train experienced national trainers of trainers in key community building skills as in Appendix C. **Impact:** *The highest level of achievement in training is related to a skill set that has more to do with empowerment, tolerance and humane values – and confidence – than 'how to read a room', but includes this, too. This knowledge –always valued by leaders of poorer and disenfranchised people – is transferable and critical.*
- 5. Providing web-based networking tools for village people with diverse languages:** The purpose of this website is to provide a platform for peer support, communication, recognition and empowerment. With Indian government, private sector and ngo participation, Jhai will help build a GIS based, Wiki website. The website will help villagers share information and questions on social and technical issues as they are implementing their new systems and businesses. Quarterly virtual, statewide and national meetings will be scheduled with near simultaneous, UN-like translations. **Impact:** *This simple-to-use website will enable poor people to teach other poor people how to succeed, despite language barriers. It will also build knowledge for government and the Indian private sector about economic development and business practices that cannot become available in any other way.*

Jhai's track record and leadership

Jhai Foundation has won the Stockholm Challenge Award in 2001 and was a laureate in the Tech Awards in 2004, the two most prestigious prizes in ICT and development. Jhai's work in Laos was declared 'best practices' by UNESCO, the UN Secretariat, e-ASEAN, and the ADB. It has been supported by the Cisco, Intel, the governments of Sweden, Canada, Lao PDR, and the US, as well as the World Bank and many foundations and individuals. It has been covered by the Asian Wall St. Journal and the US Wall Street Journal, BBC TV, radio and website, the Economist, CNN, ABC-TV, NPR, the New York Times, the Christian Science Monitor and all leading US media sources. Globally it has been covered by hundreds, if not thousands, of media outlets including internet media outlets.

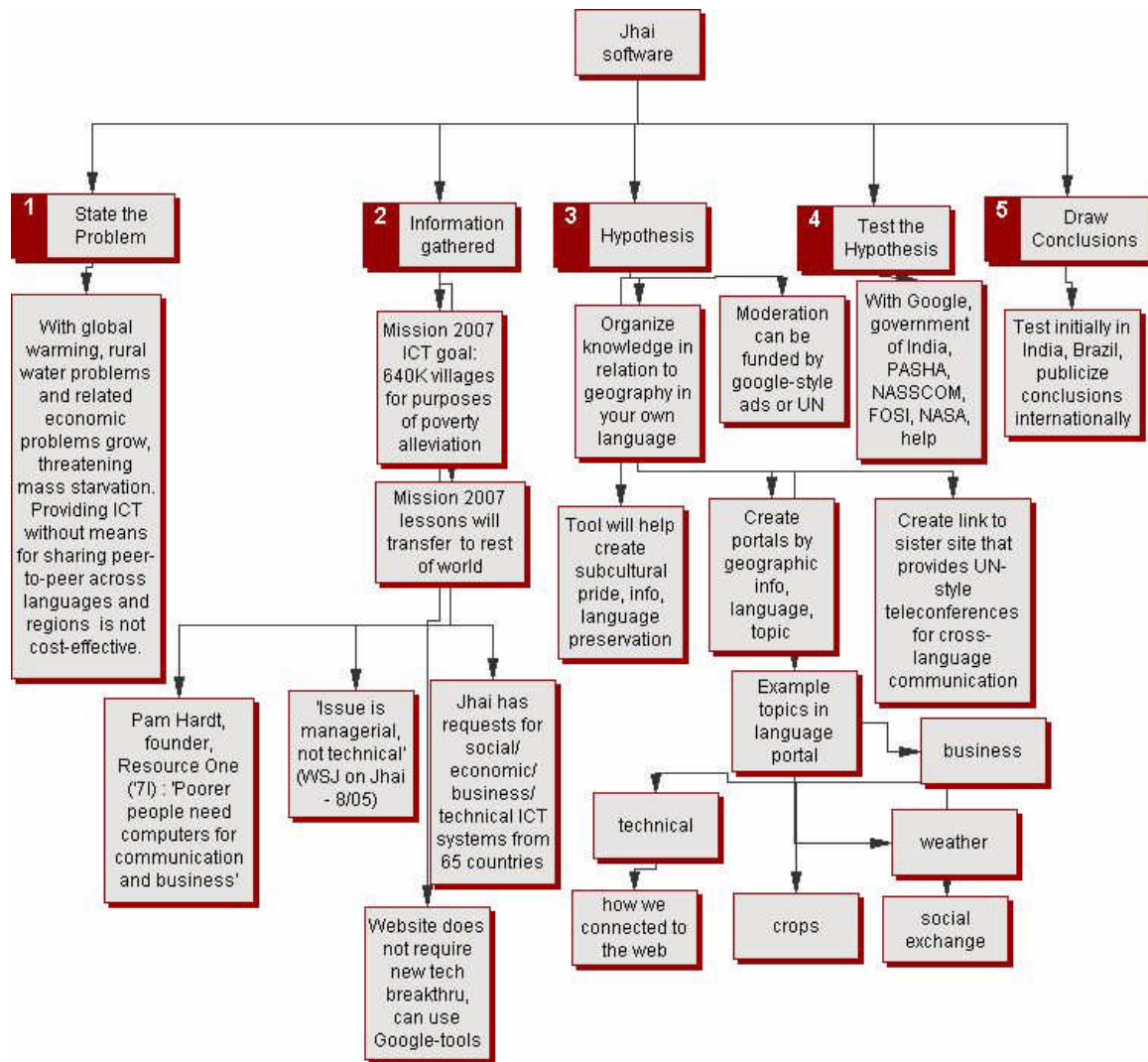
Lee Thorn graduated in 1969 with a degree in political science from the University of California, Berkeley, after being selected for honors programs in history, political science, sociology, and anthropology. He went Berkeley-Vietnam-Berkeley in the 60s. In Vietnam he worked as a bomb loader, among other roles. He was a co-founder of Vietnam Veterans Against the War where he worked with John Kerry to merge organizations in the West and East, then went on to design the first self-help, multi-service agencies for returning vets, and did everything from global strategy and US public policy development to organizer training. Lee was also a senior strategic advisor to the Independent Living Movement of People with Disabilities' Ed Roberts, generally considered the movement's founder, for over 25 years. He studied planning at the graduate level at Antioch. He taught organizational development, ethics, and leadership at the University of San Francisco in the 90s after completing his MBA. This followed over 20 years of global management consulting mainly with state-of-the-art social service and advocacy organizations serving and often led by poorer and disenfranchised people. Lee founded the Jhai Foundation in 1997 with Bounthanh Phommasathit, whose villages was destroyed by American bombing. He is married to Bernadette McAnulty, has three children and lives in San Francisco.

Jhai proposed activities

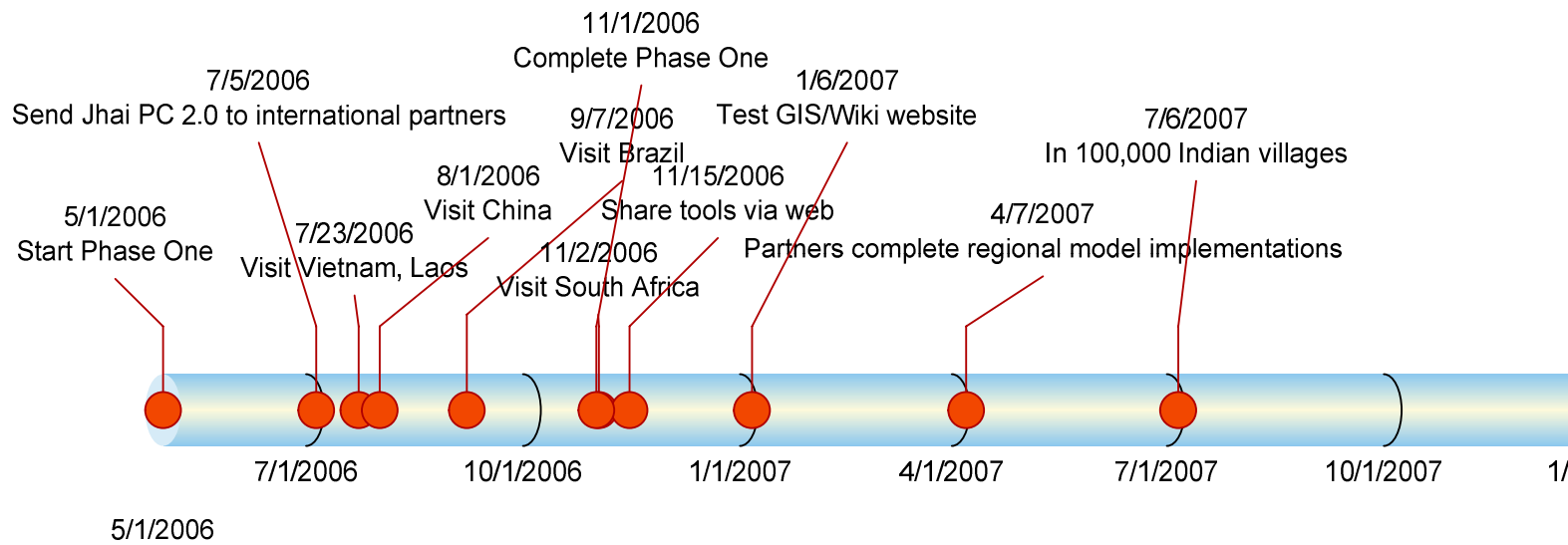
Issue	Deliverable	Jhai Service	Partner(s)	Risk reduction	Where	Start Date	How long	Comment
A. Villages/ neighborhoods have to want/understand the service	Well-tested participatory ICT and develop training, facilitation	Localize, document best practices using text and video, create tools, train trainers, make available worldwide	Datamation Foundation Trust	Community buy-in from de facto leaders decreases risk	Kasmandi, Kaori, Faristipur, Bithoor, Jaimau, Rail Bazar, State of Uttar Pradesh, India (6)	5/06	3 months	Lead consultant to Department of IT.
			MS Swaminathan Research Foundation (MSSRF)		Pillaiyaurkuppam, Sivasakthi Nagar, Thiruvaiyaru, Sembatti. Nelakkottai, Annavasal, State of Ponticherry, India (6)			Lead organization of Mission 2007.
			NASSCOM Foundation		Chandabali, Bhadrak, Ersoma, Jagatsinghpur, State of Orissa, India (4)			NASSCOM is the national trade association for ICT industry in India
B. Business planning processes, tools need to be localized, appropriate. One size does not fit all circumstances or cultural conditions.	Tools built from actual experience in rural villages in Laos, US, localized for India	Work with partners to document best practices via video and text, build pictorial documentation, train trainers, make available worldwide	Datamation Foundation Trust, MSSRF, NASSCOM Foundation	Award-winning, proven, yet very localizable system tested in remote villages in very tough environment of Lao PDR reduce risk	As above – all three sets of sites	5/06	3 months	For sustainability, systems must be locally built. Our planning tools and support systems are scalable and participatory and easily localizable.
Web-based networking tools for people with diverse languages for peer-to-peer support	Jhai relationship 1st page, GIS/Wiki site, scheduled verbal online conferences with translation services	Jhai builds site with international partners, monitored and managed in India	In negotiation	Peer-to-peer support always works best, builds valuable knowledge fast. Worldwide application	As above – all three sets of sites	6/06	6 months (funded separately)	No new programming required to build. User-friendly, down to RSS, builds on current work of FOSI, MSSRF, NASA, others.
Full system introduction – recent invitations, partners	Test machine, enter into partnership on services, tools	Provide machine, co-design program	SEWA, n-Logue, Amity, Gems of the Earth, City of Capetown, AF, others	As in above cumulatively plus experience gained in first tests	India, China, Brazil, South Africa, Vietnam, Lao PDR	6/06	18 months	Jhai has been approached by leading organizations in 65 countries

Need:

\$432,000 over two years, plus development and maintenance cost of Jhai wiki/GIS software. Budget provided upon request.



Jhai Timeline



Appendix A. Key technical issues remaining

Jhai's assumptions about infrastructure – based in part on Dr. Ashok Jhunjhunwala assessment ¹

- Intermittent surges and drops throughout electrical grid; In rural areas electricity available from 16 hours/day to zero hours availability – tending towards the lower end in less urbanized regions
- India has fibre optic lines to most taluka headquarters.
- It will be possible to lease BW at 2 mbps reduced at access to no more than 100 mbps on these fibre to make a Rural Backbone VPN.
- It will be possible to add capacity when needed
- Intra-rural communication remains on VPN. VPN connected to Internet at one or two points
- BSNL and other owners will allow placement of Wifi and/or Wimax antennas on their towers

Suggested village/hub design:

4-10 low power, very thin clients, 1 low power, full function, rugged, inexpensive Jhai PC-like machine with 12-15 inch LCD screen with no moving parts, all running Linux but able to 'see' MS programs; camera, printer in village

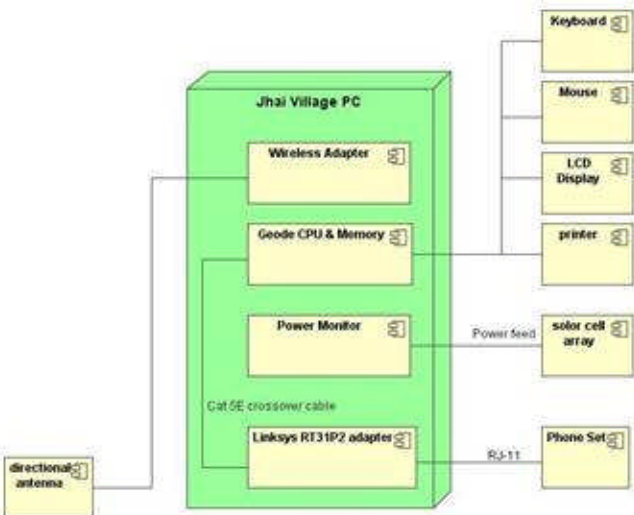
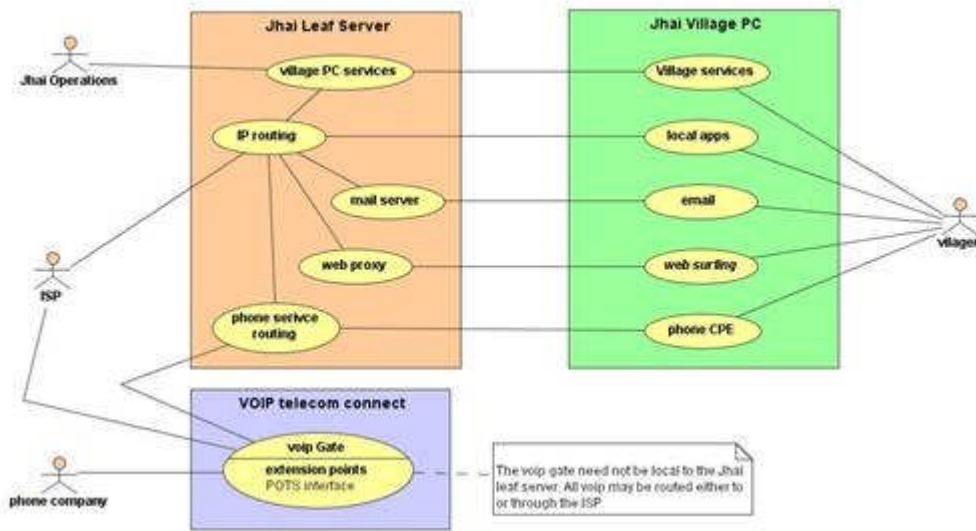
2 servers at hub each with built in redundancy – one runs MS, one runs Linux

Wimax or shortwave connectivity if possible, WiFi if not

Key Technical issues				
Issue	1st level solution	2 nd level issues	2 nd level solutions	Challenges
Energy v/v hours of operation for village ICT business	Low power , rugged, affordable client and full function computers	Speed	AMD Geode 800 LX or similar,	Design low power machine for one board to reduce costs
		Demand	Adopt, assume buys with Jhai help in other countries	
		Reliability	Localized Linux in villages, MS and Linux at hub servers	Allowing for greatest reliability in villages with maximal flexibility on content
	Alternative power generation	Alternative power	Usually bike generator, also wind to grid credit, water, motorbike/roller (solar currently too expensive)	Manufacturing capacity in India for Bike generator – district franchise model needed (Lee Felsenstein has plan)
Keeping networks up	High quality components	redundancy	Spares, server design	How many, which spares, JIT, where stored, security, redundant network parts, servers into costs into budgetary process
		Towers are very expensive	BSNL towers, trees, bamboo, GIS/Wiki on issue	Needs further consideration and local data
Tech support	Hub and spoke	Hardware fix	new, included maintenance processor	Market demand to justify R&D (Lee Felsenstein, colleagues have concept), need for

				backend tech support ,can turn power switches on and off
		Software fix	5 minute saves	On Jhai PC v1.6
		Training, confidence in OS in local languages	State level hub issue? Website w/translation services, conferences	Needs further consideration and local data

Jhai's Initial solution as proven in field tests (drawing 1 and 2)



COUNTRIES WHICH HAVE EXPRESSED INTEREST IN THE JHAI PC

Afghanistan	China	Guadeloupe	Malaysia	Philippines	Turkey
Argentina	Colombia	Guatemala	Mali	Portugal	Uganda
Australia	Congo	Guinea-Bissau	Mexico	Russia	United
Bangladesh	Costa Rica	Honduras	Morocco	Rwanda	Kingdom
Benin	Croatia	Hong Kong	Mozambique	Senegal	United States
Botswana	Denmark	India	Nepal	Solomon	(Indian tribes)
Brazil	Dominican	Indonesia	Nicaragua	Islands	Uruguay
Burkina	Republic	Iran	Niger	South Africa	Venezuela
Burundi	Fiji	Iraq	Norway	Sri Lanka	Vietnam
Cambodia	Finland	Italy	Nigeria	Sudan	Zambia
Canada	France	Kazakhstan	Pakistan	Sweden	Zimbabwe
Cape Verde	Guiana	Kenya	Papua New	Tanzania	
Chad	Gabon	Korea	Guinea	Thailand	
Chile	Germany	Lesotho	Palestine	Togo	
	Ghana		Peru	Tunisia	

End Notes

¹ In a post on his blog <http://www.internautconsulting.com/wordpress/?p=10> , Jon Peizer, who recently retired from his long term, senior position with Soros Foundations, started Internaut Consulting, and advises Jhai, said something that is so good it deserves quoting in full: "I was at the recent Innovation Funders Summit Meeting in San Francisco where a number of participants got together to discuss projects that spawned social entrepreneurship. The questions was, which models worked, which did not and what could be further replicated and scaled?"

"Participants discussed the Grameen village phone initiative, Drishtee and n-Logue telecenters in India, Soros spawned ISPs, school computing centers developed by the Shuttleworth foundation, the IDRC managed Telecentre.org initiative and Techsoup and its international partnership expansion. All these initiatives are different, and have distinct outcomes. Their connecting trait is that they all used technology as a core mechanism for achieving a social mission objective.

"What became clear in the first couple of hours of discussion [and what surprised the meeting participants] were that all had a similar structural model that contributed significantly to their success: **Successful initiatives with wide geographic reach typically supported local entities that provided products and services to their constituencies — these entities were serviced by a hub providing backend administrative/technical support.** How these hubs related to the local entities, what services they provided, how authority and responsibilities were divided between the local entities and hubs and the financing mechanism to support the hubs differed between projects. However, the basic structure of local entity supported by a hub was the common denominator.

"This structure may very well explain why there are so few scaleable social venture initiatives. Most initiatives that meet both social mission and sustainable objectives require startup underwriting. Philanthropic funders, (versus VC's, banks or corporations) are often the early underwriters of such efforts because they understand social mission objectives. They are typically far less successful at scaling projects [once social missions are met] to the next level of revenue generation and sustainability – VC's, banks and corporations are far more likely to provide this successful, second phase, support.

"Here is the problem.

"Underwriting large scale projects with structures that create local entities on the ground supported by a backend hub — whether national, regional or global, are often eschewed by the very funding agencies more likely to provide initial "angel support". Funders typically focus on developing local entities (for example telecenters) but not on separate "overhead" entities that provide administrative / facilitative / coordinating support for these entities. Separate administrative support entities often don't fit neatly in funder issue portfolios or in their geographic focus. The irony is that in these large scale projects, the local entities funders do support suffer from the same lack of administrative capacity that individual NGO's supported by funders often do.

"When you think about it, the Erider movement, Compumentor, Npower, etc... all follow a similar premise... because the requisite operational expertise does not exist within the individual NGO's supported by funders, it has naturally evolved outside the NGO in the form of support entities providing capacity expertise to the local organizations they service. In the case of both funder-supported NGO's and funder projects which create multiple local entities the is issue is often that the local entities lack internal capacity — so capacity support ends up being provided in aggregate by a separate service hub.

"The global telecentre movement is an excellent example of this phenomenon. Tens of millions were poured into local centers globally in the late 90's with no thought to how they would operate as a network in support of each other. Consequently, they fell out of funding fashion and many withered and died. Now the IDRC, Microsoft and the Swiss Development Agency are funding an effort to develop the telecenter movement into a more networked ecosystem, with the appropriate back end capacity to support the local Telecenter initiatives.

"My concern is that the reason there are so few workable, scaleable and sustainable models is because "angel" funder agency support is actually skewed toward less workable models in the first place. It is possible that initiatives just don't fail, but rather that the standard pattern of funding support sets them up for failure almost from the start by not providing the appropriate capacity. In each of the successful examples discussed, the funding agency initially recognized that capacity support was vital to the success of the local entities they set up – and in each case supported project infrastructure in the form of a "hub" entity providing that service. "

Posted by Jonathan Peizer on Thursday, February 9th, 2006 at 7:56 am

² . It should be noted that this applies to scaled projects, not necessarily scaled, profitable projects. Dr. Deepak Amin, formerly a board member of Drishtee Foundation and currently an advisory board member of Grameen USA, indicates there may be as few as three or four profitable telecentres projects in the world. (email to Lee Thorn, 27 February, 2006)

³ Lee Thorn graduated in 1969 with a degree in political science from the University of California, Berkeley, after being selected for honors programs in history, political science, sociology, and

anthropology. He went Berkeley-Vietnam-Berkeley in the 60s. In Vietnam he worked as a bomb loader, among other roles. He was a co-founder of Vietnam Veterans Against the War where he worked with John Kerry to merge organizations in the West and East, then went on to design the first self-help, multi-service agencies for returning vets, and did everything from global strategy and US public policy development to organizer training. Lee was also a senior strategic advisor to the Independent Living Movement of People with Disabilities' Ed Roberts, generally considered the movement's founder, for over 25 years. He studied planning at the graduate level at Antioch. He taught organizational development, ethics, and leadership at the University of San Francisco in the 90s after completing his MBA. This followed over 20 years of global management consulting mainly with state-of-the-art social service and advocacy organizations serving and often led by poorer and disenfranchised people. Lee founded the Jhai Foundation in 1997 with Bounthanh Phommasathit, whose villages was destroyed by American bombing. He is married to Bernadette McNulty, has three children and lives in San Francisco.

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⁵ In 2000 we created a financially self-sustaining, community owned pilot in rural high schools in Laos. ALL high schools report profit this year and, with the exception of one which had telephone service problems, every year since inception. All have upgraded their computers and have saved money for replacement. All use the computers in school for free during the day to train from 250-to-500 students a year in computer know-how. Each business plan is different, but all have used the same Jhai planning and enhancement tools. For this work we won the Stockholm Challenge Award and many 'best practices' designations. We are preparing, now, for ICT use in coffee villages. The Jhai Lao Coffee Farmers Cooperative has sold their product at guaranteed, high prices for four years. It is now Fair Trade coffee and will soon get organic certification.

⁶ In 1998 we provided computers for the very rural Phon Hong district hospital in Lao PDR. We trained 20 staff in their use in local language, customized hospital supply and pharmaceutical inventory control. The system is obviously community owned and is a point of pride. Nearly 200 people came to celebrate its inaugural and it is still in use with community support. It saves money and lives.

⁷ Jhai Foundation developed the Jhai PC prototypes (v.1.0 and v.1.6 – original design by Lee Felsenstein) in direct response to clearly expressed community needs in five villages that had no electricity and no telephony of any kind, and whose one road washed out during the rainy season (2003-present). We are completing, now, a field test of the technical aspects of this system in the Navajo native people's community of Sawmill in the US. The computers have never crashed. We know in detail from this on-the-ground work that the challenges in remote and rural communities are great, but not insurmountable. See <http://www.post-gazette.com/pg/pp/05213/547152.stm> for recent article on this effort originally run in the Wall Street Journal. The Jhai PC was originally designed with PC-104 embedded digital electronics, with 802.11 (WiFi) connectivity, Open Source GNU/Linux software, localized KDE applications, micro-disk memory, H.323 VOIP protocol, V.34 model to ISP, and telephone set as user interface. System functions included local telephone service, overseas telephone service through internet gateways, voice communication among villages, and basic office functionality in Lao including word-processing, spreadsheet, and database. Its design system requirements included 10 year service life, high ambient temperature (40C) and humidity, unattended relay operation and no moving parts. Hardware for version 2.0 or Indian PC would include single-board design using the AMD 800 LX Geode or better (500 MHz, 0.9 watts), PCMCIA adapter, voltage regulator, flash memory, capacitor bank for graceful power failure, 120 VAC inverter for printer power, desiccant cartridge, and NEMA-4 sealed enclosure. Software is suggested to include Linux (newest version) with Jhai designed and locally improved office and 'client' functionality. It also should include VoIP client software of the Skype variety or better, OpenH323 Project VOIP protocol stack and drivers or better. The peripherals are recommended to include LCD color display with SVGA interface at 12 inches to 14 inches with resolution possible at 1024 x 768), a dot-matrix printer, localized keyboard, trackball, a charging monitor, car battery array, and Rashron PPG (India) pedal generator or better.

⁸ This is based on work in Laos over the last eight years, UN reports, and my personal experience over the last 35 years compared informally with the conclusions of Indian researcher colleagues.

9 I am indebted to Professor Arun Mehta for this information sent in email on February 14, 2006: The 448 page long hefty tome titled 'The Economic Impact of Telecommunications on Rural Livelihoods and Poverty Reduction: a study of rural communities in India (Gujarat), Mozambique and Tanzania' can be downloaded from http://www.cto.int/downloads_programmes/kar8347.pdf and has some interesting insights, some of them being: Telephones were: considered very important for use in emergencies, .extensively used to maintain social networks, especially contact within the family., valued more for saving money than for earning money., valued more by richer and better educated people than by the poorer, less educated or more marginal members of society - especially where financial value was concerned, considered unimportant for information gathering. Telephones are the preferred means of communications for emergencies and family networking - though they are less dominant in Africa than in India. Mass media are the preferred ICTs for general information such as news and weather - the television and newspapers being preferred in India, and broadcast radio in Africa. . Face-to-face communications is overwhelmingly the main method of communications for specific information in all three countries, including information about education, farming, business and government services.

10 The model we suggest below is based on successful training programs within the American Civil Rights and Women's movements. Preference for women entrepreneurial talent is proven in India in field tests by people like those from Datamation Foundation Trust, is consistent with UN goals, and is most likely fundable by international funders.

¹¹ My colleague, Mick Hayes, a former Special Forces soldier with both the Australian and New Zealand armies, has coordinated for the Mine Advisory Group trainings on bomb removal for up to 4000 trainees at a time. The logistics for such mass trainings are formidable. The logistics for movement of goods and services to rural areas and for all the steps prior to stepping up to solutions in each village require the kind of thinking and experience most often found in military circles. For example, one of my colleagues in India who works on wifi installation has 14 years of Indian Air Force experience with very difficult terrain and very strict conditions. These types are, I think, essential for this level of the effort. Outsiders like Mick Hayes can evaluate resources without political consequences or family pressures as an early step.