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Establishing Time Based Community Currencies: Means of Measure, Exchange and Storage

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Abstract:

In the search for operative, sustainable and complementary currencies and the methods of applying them in the real world, many discussions have occurred over the years on the IJCCR discussion website. This article proposes a perspective from an architect's point of view when applying the use of time based currencies to the urban habitat and environment, and to the provision of basic needs within its communities especially for those unable to afford them due to the reduced provisions by governing bodies, and the higher costs to these and/or to those willing to acquire them independently from the privatized substitutes.

The challenge becomes how to make the provision of these basic human, social and urban needs equitably accessible and co-operatively plentiful for the communities as well as worthwhile and competitive for investors. Too often the existing or proposed solutions are relegated to the world of charities and NGO associations and do not become interesting to the *powers-that-be* except out of a sense of personal, or corporate, moral obligation or social commitment.

Thus, for a time currency to serve as "money" in the purchase of these basics, three simultaneous and non-contradictory roles are demanded of it: "it must function as a means to a) measure costs, b) foment exchanges and c) record transactions [(a)]." This article tackles these issues and invites debate on the positions taken.

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ESTABLISHING TIME BASED COMMUNITY CURRENCIES: MEANS OF MEASURE, EXCHANGE AND STORAGE

Introduction

As an architect my focus has been to establish a means to use time currencies as a value method (fair return for something exchanged) in an urban built framework:

Urban because it is in cities that exchanges can occur and where one is a member of a community. For individuals to be members of that community, they need to reside in it. Their "residence" becomes their identity. A group of communities form the city with their complimentary and supplementary attributes. In all non-nomadic societies, your place is determined by your "address", which etymologically is your "place of right" (OldFrench: *ad* to + *drecier* straighten, arrange, direct - to put right). A person needs an address and tenure to establish any legal claim.

Built framework because it is in the home that individuals – and, in the urban habitat, that groups – establish their roots and forge their future. Their residence is not only a shelter from the elements but a place from which to progress and give hope and meaning to their life – to establish a legacy. *Pride in one's place* is as much a part of one's sense of belonging to a community as is the image one projects and receives from it. "Cheap" materials may be able to provide shelter but cannot create a sense of home and anchorage, which implies stability, identity and worth. It is the quality of such structures that distinguishes its value, not its cost.

As a militant architect concerned with finding ways to provide greater access to *quality habitat* for the ever-growing number of urban disadvantaged, I question the existing methods of constructing, financing and marketing those basic habitats that constitute the foundations of a city: housing, schools, health centers, public spaces, streets and all that is urban. How can governments, private entities and/or civil authorities and associations provide the elements that establish that *pride of place*?

Background: Housing as a global urban problem

One half of the 6,000 million people on our planet are urban dwellers and one half of them live on less than $2.00 a day. The world's population has a net increase of 93,000,000 people a year for whom housing must be found, let alone their need for water and food. A worldwide prevalent myth claims that "opportunity for a sustainable livelihood is to be found in cities", which brings many people to seek "fortune" in the uncontrolled sprawl of our growing megalopolises: 25 cities have more than 10 million inhabitants, 100 cities have more than 4 million and 500 more than a million according to UN 2000 statistics. It is foreseen that 80% of the world's population will be urban by 2050 if rural exodus and population growth continue at present rates.

Most of those arriving to these cities get there with "only the clothes on their

back". They tend to squat or are granted temporary shelter by relatives or host NGOs. And this does not take into account those areas in the world where internal conflicts or natural disasters produce enormous settlement needs for suddenly displaced peoples.

The United Nations' Universal Declaration of Human Rights of 1948, the Agenda 21 from the World Earth Summits of 1992 and 2002, the HABITAT Agenda from the Istanbul World Summit of 1996, the Millennium Development Goals of 2000, as well as many second and third generation human rights have been recognized and acknowledged by most, if not all, 191 member countries of the United Nations. It is with these acknowledged, advocated and legally ratified basic common human livelihood "elemental tools" that every human being can claim to have a right to access them. This notion of *access to* is what generates many of our world's debates, arguments, battles and negotiations with government, industry and society.

The basic social and human needs (*especially when dealing with conditions of high concentrations of human beings in settlements*) have been established by several global organizations and can be grouped into seven categories [(b)]:

1) Water and sanitation	[*Clean water (15litres/person/day), toilets, drainage…*]
2) Nourishment and energy	[*Food (2000 cal/person/day), agriculture, forestry…*]
3) Health and security	[*Preventive medicine, hospitalization, protection, care…*]
4) Habitat and land use	[*Housing 25 to 36m^2 /person, land tenure, greenspace…*]
5) Education and training	[*Equitable access to education standards and training…*]
6) Transportation and communication	[*Equitable access to public transportation and information*]
7) Employment generation and income	[*Equal pay for equal work, equity in work opportunities…*]

These *third generation rights* are those often called solidarity rights and they include the right to peace, to development, to a population's self-determination, to healthy nourishment, to the environment, to information, to communication… and **to the city**. A proposed charter on the "Right to the City" is circulating and hopes to be adopted at the 2006 World Urban Forum at Vancouver (HABITAT III)[(c)] granting more say and participation to those needing to be part of the urban network with a maximum of social, economic and cultural exchange.

The precarious nature of our globalized economic system

It has become increasingly difficult to provide the fulfillment of these habitat needs given the fact that many of them were organized, promoted, programmed or sponsored, etc. by government agencies. Now, many of those governments lack the funds for doing so. Some governments are starting to privatize the services that provided relief, or are letting them default by integrating them into other government divisions or programs and therefore becoming reduced in scope, budget and impact.

Will the private industry be able to satisfy the need for the goods and services necessary to provide *adequate* housing and city infrastructure for all the world's urban inhabitants? Will investors be able to satisfy their ever-growing need for a 15 to 20% return-on-investments to shareholders by building housing for the 1/2 to 2/3 of

the world's urban population who only earn survival "wages"? The housing construction industry won't see any advantage or benefit in marketing their products to this disadvantaged group whose purchasing power can't satisfy their shareholders' "needs"! Does private industry even want to tackle this problem?

If resolving this problem cannot be found within the existing economic systems, can the definition, scope and scale of "purchasing power" then be adjusted to the burgeoning system of Time Based Community Currencies?

The Keynesian adage of "demand creates supply" is now only as valid as the desired return on investment. The demand is there but it can't be made for the existing purchasing power of those it would benefit. A Marxist position of worker-owned factories producing the goods and services for the needy wouldn't work either because those for whom the production is aimed can't afford them anyway! Solving the problem remains unattainable for either socio-economic vision given its scale.

Concentrating or out-sourcing production of housing construction materials of products in countries with low operating costs won't make them cheap nor plentiful enough either. The rise in energy and delivery costs may become counterproductive.

It would seem we are at an impasse since no other system of mass production could satisfy the demand. Could the answer be in modifying the way to supply for the demand? The problem is still how to pay for it, both at the source and at delivery.

Establishing Time Based Currency as an operating economic reference

Given the precarious condition the needy face for their own survival, how can Community Currencies or Time Based Currencies intercede to transform slums? How could they satisfy the need of providing adequate and dignified housing for the soon-to-be majority of the world's population who won't be able to afford market prices? And how, at the same time, can these local economic systems provide a source for sustainably participative and progressive development that would benefit local, regional and even foreign investors?

When Dr. Edgar Cahn makes his argument [(d)] for the "use of hours as a measure for complementary currencies" he states: *"Time Dollars operate on the principle of an hour equals an hour of any person's time, no matter what service they provide*. *LETS [Local Exchange Trade Systems], operating as a barter currency, mirrors market pricing more although rates are determined by the value of the exchange to each individual."*

In a LETS framework one needs to set up a "local trade support system in order to build a sense of community." There may be no problem when considering the "worth" of a printed Community Currency for similar goods or services such as an artisan quality artifact, an heirloom, a meal, a babysitting hour, an hour of elder care, an hour of massage therapy, an hour of computer training, etc.. But expanding the trade to an urban scale becomes unmanageable.

When considering Time Dollars, or better Time Currencies, the effort an individual provides is accumulated in his/her account. "*As a currency it operates through a computer program that tracks exchanges between members*." Whatever a person's skills, any hour of work done can be tabulated. If a person receives or performs an hour of household chores, that hour is "debited" or "credited" to his/her account.

One does not trade a service for a service or for an item, and vice versa, but rather accumulates *hours* in one's account. Those hours become capital for trade. But how one trades those hours and how one measures them, is what is different in the Time Currency or Time Banking System.

Economists and industrialists tell us the world has become capital intensive and no longer labor intensive. They also tell us that there will not be enough manual labor outlets and that we all need to be "educated for a world of business" based on the Liberal Market Economy model. That may be true from a Fordist viewpoint, yet manual labor is still a growth capital with the world's present population net increase rate of 93,000,000 people a year.

The skills available to that manual labor are not mainly a factor of better education but rather of better tools: E.F. Schumacher's [(e)] "small is beautiful" philosophy is more than ever applicable in resolving today's basic needs. It is more the economic system under which it can operate that needs adjusting. Instead of relying on goodwill, charity and NGO punctual interventions, a more sustained and durable undertaking is needed. And it's the tools to produce the components for optimal basic quality-of-life goods and services that need to be designed as well as lasting, sustained and strong co-operative and participative operating models.

The two types of industries: the free trade consumer market production and the basic quality-of-life component production.

On the one hand, for the first type of industry, *commerce* wants to produce goods and services that respond to every possible variation for a wider market (mobile-phone + camera + email + ipod +…, or customized versions of a platformed design… , itemized insurance coverage packages…, single songtrack or vieotrack downloads…). The *consumer* as well wants everything to be affordably personalized. Yet the fastest growing sector of the population is the one with the least purchasing power since more of his/her earnings have to be spread around to satisfy simple basic daily needs in an urban environment.

There is a point in the race of the industrial growth of nations where the items and services produced can no longer find their outlets, however much advertising worldwide is invested to create a market for them, and however much the production is mechanized. The contradiction is mind-boggling:

i) We want more goods and services to chose from to satisfy our appetite but we have less to spend on those items we want;
ii) Investors want to sell their products at the cheapest production cost but still want us to pay the best price to satisfy their need of return on investments;
iii) Governments are providing less basic services since they are lowering the taxes on those best able to pay them and want us to purchase our basic needs from the privatized divisions of the welfare and social security system.
iv) And conversely we have less purchasing power for those basic coverage and support needs when the better paying jobs require more expensive education or training.

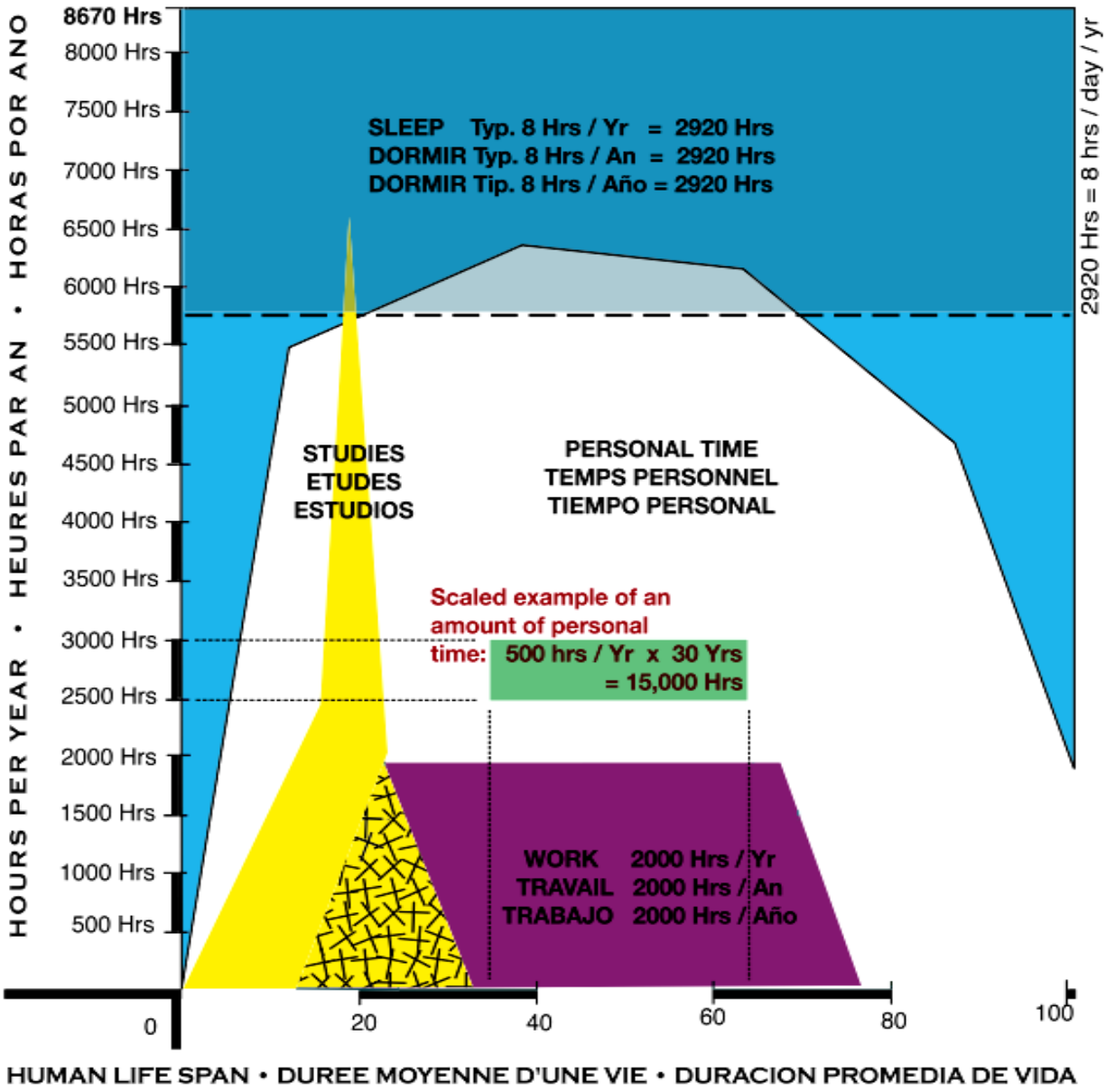
For the second type of industry, the c*onsumer* wants those elements that make his life sustainable to be affordable and accessible: fresh water and sanitary conditions, food, housing, basic health care, education and job opportunities.

Thus extending production systems for more variety will imply more labor to assemble the variations beyond what can be mechanized. Therefore the trend ought to be rather in *multi-scaled* production (or what is known in mathematics as fractals where an object is extremely fragmented at whatever the scale it is analyzed) and *pluri-tasking* applications (or versatile adaptability of base components).

Establishing Time Based Currency as a means to measure

Time as a universal, constant and equally distributed element cannot be shortened, lengthened or speculated with. Each person's time ticks at the same speed as every one else's. Each person has the same amount of hours in a day as the other. Time is the great "equalizer". As a fixed standard, anyone's reference to it is the same.

The following graph shows how much *time* there is during a person's lifespan, and of that time, how much of it is – or should be – spent in theory on sleep (8hrs per day), on studying during childhood, and on working in adulthood. The area in white is the theoretical "free time" one would have disposable for personal endeavors. These values can be considered as practiced in most, if not all, urban conditions with slight variations when individuals are not exploited and are in control of their destiny.



What that hour is then traded for is what is to be argued here and can form the basis for the second type of industry based on producing basic quality-of-life components. It is in the "*cost in hours*" that an item or service must be evaluated. How to tag a cost in hours to an item or service in order to trade one's accumulated hours for those hour-valued goods or services, is the main question. How can those items be measured in a Time Currency system?

Take housing, for example, as one of the basic elements within a community that an individual needs; yet, if he/she does not have any equity, how can he/she trade for it within the Time Currency System?

Economists recommend in general terms that "persons starting off in life and employed in an urban environment" should allocate 1/4 to 1/3 of their annual salary toward their housing needs. This would be equivalent to from 500hrs to 666hrs if one considers an annual work period to consist of 40 hrs a week for 50 weeks a year (2,000hrs/yr) and shown above in purple proportioned to the average productive period of 40 to 47 years of an adult's work-life.

How does that translate into the "cost" of a house?

If we take Mexico's National Bank calculation method of estimating the cost of a 125 to 180m^2 house(1) for a family of 5 to 7 people to be equivalent to 10 years of a minimum wage salary at the time of calculating that country's yearly social housing budget, we can draw a table that shows the average market cost of such a base starter house. We can compare it to the equivalent value of ten years of a minimum wage salary for each decade and country shown in the table below. [10 years at 2,000 hrs per year is 20,000 hrs]:

YEAR	1960s			1970s			1980s			1990s		
	Hourly Minimum Wage	20,000 Hours	Average cost of a 125 to 180m² House	Hourly Minimum Wage	20,000 Hours	Average cost of a 125 to 180m² House	Hourly Minimum Wage	20,000 Hours	Average cost of a 125 to 180m² House	Hourly Minimum Wage	20,000 Hours	Average cost of a 125 to 180m² House
US United States	1.50 US$	28,000 US$	30,000 US$	2,20 US$	44,000 US$	50,000 US$	3.10 US$	82,000 US$	70,000 US$	5.25 US$	105,000 US$	100,000 US$
FR France							14.00 FF	280,000 FF		42.60 FF	852,000 FF	
CL Chile							13.00 $CL	260,000 $CL		50.00 $CL	1,000,000 $CL	
KE Kenya										0.68 K£	13,600 K£	
BR Brazil										0.91 R$	18,200 R$	

Note: These numbers were determined through Internet search. Any additions, corrections and/or new data are graciously welcomed

This method of figuring the cost of an average house holds up for many countries in the world when governments have a handle on guaranteeing minimum wages. But, despite the economic optimism constantly expressed by the G8 on the advantages of globalization and how it is supposedly increasing wealth distribution to the less fortunate, it seems that there is no minimum wage that can keep up with the cost of living price increases: the world's fastest growing economic sector is that of the poor.

If a person could allocate the 1/4 portion of his/her annual minimum wage salary over 30 years as "mortgage" payment, these 15,000 hrs would cover 3/4 of the cost of our tabulated house. The 500-hours-per-year-over-30-years band shown in the graphic above is in scale with the chart so that you can appreciate the time impact this "mortgage amount" would take from an individual's "free time" if he/she were to allocate the equivalent earning power toward payment on the house's cost.

Yet less and less people have access even to minimum wage salaries. Whether it's because they have less access to minimum education, training or other elemental survival skills since many local social services are becoming privatized, and thus unaccessible to those who need it most. Or whether because the cost of urban living is increasing so fast that even those who try can't stay in school or training centers and need to work in order to contribute to the family unit's survival needs. There seems to be an ever-growing downward spiral of impoverishment worldwide.

Time Based Currency as a means of exchange and the advantage to investors

Accepting therefore the value of a house to be set at 20,000hrs, it can be argued that 1/3 of that value is material and labor costs, 1/3 operation and interest costs and 1/3 profit.[g] This would, therefore allot ±13,500Hrs to the cost of producing a house and relegating the profit to be gained from exchanging it for Time to be used by investors from the household who receives the house. Note that the same can be applied to other community constructions or services

If we consider that most home mortgages are either 15, 20 or 30 year "loans" paid at many diverse interest combinations to loan institutions, we can say in summary that 30 years of the recommended 1/4 to 1/3 of one's salary (500 to 666Hrs/year) will be the equivalent of from 15,000Hrs (500hrs x 30yrs) to 20,000Hrs (666hrs x 30yrs) at a minimum wage salary in an urban condition. Let us choose the 15,000 hrs value for our calculations.

If one of the family members newly housed offered his/her time as payment to the investor, the investor could apply that time toward production of items or services, which can be sold at "current" market prices. The value of that *time used* by the investor would become the way of procuring profits instead of relying on ever increasing home market prices to be recovered in mortgage payments to banks.

The minimum wage exchange offered by the indebted "mortgagee" [OldFrench *mort* death + *gage*, pledge] becomes a "life-pledge" of *time-to-be-used* by investors. The pledge becomes fixed to actual house costs. It turns out to be equitable in the transaction as much for the buyer as for the builder/investor. For the investor, the "payments" are kept actualized along local and global economic fluctuations since it is transferable to current marketable items investors can speculate on.

One can also imagine several members of a family contributing to "paying off" the house's *life-pledge* and thus either shortening the period of commitment or spreading the commitment to other members of the family without penalty to the investor who still is able to use the complete "time debt" for providing marketable products or services and not foregoing any interests that are gained on the open market from their sale.

Those investors using the exchanged 500 to 666 hours of labor per year over ±30 years for a good standard-quality house it has invested on building, can offer products or services resulting from using those hours in their companies. These

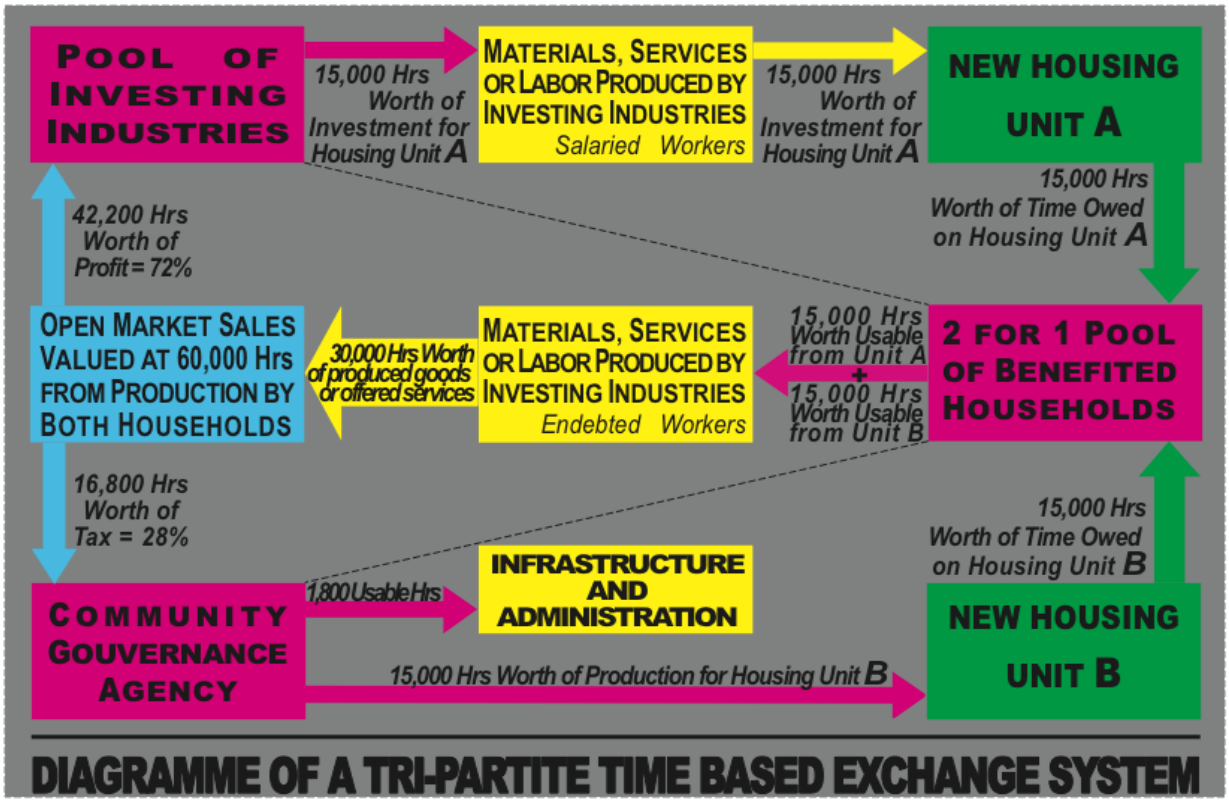
products can be sold for cash at twice to three times their fabrication cost on the market without having to "pay" for labor costs. The argument that a company most often uses for outsourcing or relocating being its labor costs, can be turned around and used by a country's workforce in order to keep production and wage earning jobs "at home".

Discussions must be made for the flexibility of how much time-pledges can be used at one time: seed companies or industries, for example, may be able to operate with more time-pledge employees than more established and profitable ones.

The fact that an indebted family's cash income from their real salaried job is not compromised by the need to make any "mortgage" payments would allow a family's budget to be used on the open trade market thus stimulating the consumer market of the investors' production and the community's economy.

Time Based Currency as means to record transactions

The products or services that the investing industries sell at market value will bring in faster profits and greater returns than the return-on-investment expected from the housing industry itself, which mostly benefits the loan companies and not as much the building industry.



The above flow chart allows investing industries to capitalize their investments with a two for one exchange if, when marketing the products derived from using both sets of usable 15,000Hrs, a 28% profit tax is funneled to the community to provide

the additional indebted construction to the 2x1 pool of benefited households (unit B).

The system implicates an active, co-operative participation of three parties: the investing industries with goods or services, the newly housed committed participants and the local community gouvernance agency. This agency would be in charge of:

A) Determining the optimal – not minimal – housing and community infrastructure design and planning with the local participants;

B) Establishing and monitoring the participants' accounts;

C) Promoting exchanges within and beyond local and regional groups;

D) Developing new opportunities and seed industries for the community.

This medium of exchange method can provide a springboard for industries of all kinds to no longer consider a basic housing unit as a commodity to be speculated on, but to become an asset whose fixed value in *hours worth of labor* are tradable. Those hours of the provided house becomes the recorded transaction and not the house's value. It is those hours of labor that become the leverage just as much for the laborer as for the industry, whether in services offered or in goods produced. If a person or family would default on their commitment, the contracted hours are the recorded negotiating element. The remaining worth of the hours traded-in on the house is maintained through extending or renegotiating with the new tenants. Speculation and open market sale for cash can only be considered after the investor has gained the return on investment contracted.

Conclusion

In a world of ever increasing problems of basic survival, of essential nutrition, of employment opportunities, of spreading viruses, of warring conflicts, of natural or man caused disasters, of national identity, of territorial claims, of individual rights, of religious clashes, of social discord… how to provide *roost and roots* to oneself and our one's own.

The role of this complementary Time Based Currency exchange system discussed can bring a strong, cohesive, sustainable and comprehensive method to help solve the deteriorating quality-of-life that afflicts many of our present urban settlements. Given the increase in population, the decrease in purchasing power, the spread of poverty and disease, the rise of urban squalor and environmental decay, one can and must strive and struggle to help resolve these problems. The ray of hope of Time Based Community Currencies may be one of the many ways to come to a new participatory method of reaching dignified and responsible human and social solutions in our global strife toward a better possible world for ourselves and for our offspring.

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• Human, social and urban "evolvement" through lasting and sustained development in the construction of quality habitats equitably within anyone's reach.

Footnotes

(1) The choice of a 125 to 180m^2 house is to establish certain comparable norms – *i.e.* it corresponds to a house for 5 to 7 members with 25 to 36m^2 per person, which can be considered as the commonly accepted average for a "comfortable" livable space. It is chosen in order to facilitate comparisons worldwide with available market price listings that real estate agencies and banks use. Afterwards, arguments can be made for design, but easily available statistics exist mostly for these household types. The upper range would take into account handicap accessibility of all areas of the home (minimum circulation around all furniture and fixtures of 82cm (32") and turn around diameters of 1.50m (60").

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