

# The Registry Monetary System

This document describes a new system of managing the world's economy that hopes to correct a majority of the problems society faces whose root cause stem from the existing system it uses: the fiat monetary system.

Any of the existing known '-isms', such as communism, socialism, capitalism, anarchism, etc., including all politics, laws, nations and religions act independently within the system, just like within our existing monetary system.

This book has been separated into the following sections:

<a href="#">Abstract</a> .....	Page 2
<a href="#">Part 1 – Derivation</a> .....	Page 4
<a href="#">Part 2 – Design</a> .....	Page 7
<a href="#">Part 3 – Definition</a> .....	Page 14
<a href="#">Part 4 – Explanation</a> .....	Page 17
<a href="#">Part 5 – Examples</a> .....	Page 22
<a href="#">Part 6 – Relations</a> .....	Page 28
<a href="#">Part 7 – Perspective</a> .....	Page 42
<a href="#">Part 8 – Transition</a> .....	Page 44
<a href="#">Part 9 – Implementation</a> .....	Page 45
<a href="#">Part 10 – The Author</a> .....	Page 46
<a href="#">Part 11 – Conclusion</a> .....	Page 46
<a href="#">Change Log</a> .....	Page 47

For the current state of the implementation, please visit [www.pppp.ca/registry](http://www.pppp.ca/registry).

I have a desire to share this design with as many people as possible to either gain support in its implementation or invalidate it.

You are reading Revision 6, Dated 2017-10-02

# Abstract

**Background:** There exists many problems faced by humanity that we've yet to solve. World hunger, environmental sustainability, criminal behaviour, unemployment, and providing the basic needs of life such as clothes, clean drinking water, housing, electricity, communications, education and basic health care to all the world's people. This paper describes a solution to these momentous problems, and more, as a reference for use in an implementation.

**Current:** The current means for solving these far-reaching problems involves various facets of social organization and behaviour, such as Religion, Politics, and all the various "-isms" such as Capitalism, Socialism and Communism. Attempting to address these issues with these processes have yet to address them sufficiently.

**Premise:** The source of these problems does not stem from people insufficiently preaching religion, or politicians making the wrong decisions, or any mismanaged "ism", institution or regulation, nor does it come from human nature; these problems will always exist because they all use a common system, created through the traditions of humanity, that we only use because we have not considered doing something different. We call this system the Fiat Monetary System, or even simply: Money.

**Approach:** Provide a design for a different monetary system that retains all of the functions of money (such as unit of account, and medium of exchange) that addresses these problems and provides for many other benefits to humanity.

**Design Summary:** Define The Registry/registrar as either a trusted person or computer system which has the responsibility of identifying people, and providing an implementation to the rules described below:

1. Introduce currency types called Charge (C\$), Value (V\$), Exchange (E\$), Progress (P\$), Reserve (R\$), Transient (T\$) and Transient Exchange ( $E^T$ ), which have owners that never change that the registrar can identify.
2. Every member receives the same amount of C\$, P\$ and R\$ as everyone else over the same amount of time, making time a common commodity.
3. People can commit labour or commodities to The Registry, which categorizes and captures metrics on them.
4. People can state Problems to The Registry and own Projects which define solutions which trace to their Problems.
5. People can allocate their P\$ and R\$ to Problems when they have no affinity towards any particular solution to a Problem, or directly to Projects when they do.

6. The Registry equally distributes P\$ and R\$ from their Problems to their Projects, weighted by the popularity of those Projects defined by the amount of direct P\$ and R\$ allocated to them by the members.
7. People do not give each other currency during a transaction, they present currency to the registrar for reconciliation and conversion, as follows:
  - 7.1. Seller sets the cost by presenting some combination of C\$ and V\$, which the registrar converts to E\$.
  - 7.2. Purchaser presents an amount of currency in some combination of E\$, E<sup>T</sup>\$, and P\$ from a Project they own. The amount of this currency has to reconcile with the cost. One (E\$, E<sup>T</sup>\$, or P\$) reconciles one V\$, and one (E\$, E<sup>T</sup>\$, or P\$) reconciles an amount of C\$ equal to the metrics of the commitments of the category of the utility sold. The registrar converts the purchasers E\$ into V\$, and destroys the E<sup>T</sup>\$ and P\$.
  - 7.3. Any Project owner can present R\$ on any categorized transaction which destroys the purchasers E\$, E<sup>T</sup>\$ or P\$, preventing its use to reconcile with the cost and destroying the R\$.
8. People can choose to purchase T\$ and assign them to anyone from the Registry, where one E\$ (converted to V\$ upon use), E<sup>T</sup>\$ or P\$ (destroyed upon use) purchases one T\$.
9. Once members accumulate enough T\$, the Registry will, and must, convert their T\$ into E<sup>T</sup>\$. One E<sup>T</sup>\$ costs one more T\$ than the amount of E<sup>T</sup>\$ currently owned by the individual, making the next E<sup>T</sup>\$ cost one more T\$ than the last.

**Conclusion:** This design essentially “prints money” when people do things we want to incentivize, and destroys it appropriately to counter hyper inflation and address abhorrent behaviour and sustainability. The incentive: To create sustainable access abundance to all for those things humanity has the technical means and resources to make enough of with progressively less and less human effort. For those things which remain naturally scarce, we use our monetary system to determine who gets their turn next with those utilities, until such time that the amount of resources which remain scarce seem too trivial to merit such a monetary system, rendering The Registry, or any monetary system, obsolete.

It also defines an implementation of a direct democracy through Progress and Reserve currency. In summary, it makes money less important for your needs, more important for your wants, and integrates it into a direct democracy making things like taxes, bankruptcy, welfare, and the requirement to have employment to sustain yourself obsolete, all while retaining the desire to strive for more in order to incentivize sustainable growth.

# Part 1 – Derivation

## Inception

Let me take you through the thought processes I went through that eventually led to the inception of this system.

It started from the fear I felt for the future of humanity, particularly for my two young children. I often found myself reading how we were consuming more of the world's resources than it could sustain. I would witness, through media and even with my close friends, family, and myself, how our values seem to shift ever more towards greed, competition, and consumption over giving and sustainability. Statistics on the distribution of the world's wealth culminating to the few made me feel like my freedom was stolen. Then there were the big problems that, with everyone I spoke with, I felt had the impression that it was just the way things were – like it was part of human nature: Famine, war, poverty, mental and physical health, theft, environmental sustainability, corruption, etc. Then, there were the not so obvious, but subtle things – like how there was a time in my life during my employment as a systems developer where we were choosing not to design certain aspects into our system as it would threaten the operator's employment. What kind of system were we living in where we had to worry about automating something due to the fear of retaliation of a job that we would eliminate? There were other subtleties that seemed unnecessary, such as unions, certain types of licensing, taxes, welfare, patent laws and bankruptcy, to name a few...all which seemed like patches to a fundamentally flawed system.

I found myself studying the root causes to all of these issues, and every time the source found itself tracing either directly or indirectly to – money.

So I studied what was published regarding tackling these issues by *changing the system*, as opposed to adapting the existing with laws or policies. I studied alternative exchange systems such as Local Currencies, LETs, credit clearing, basic income, gift economies, demurrage, and others which ultimately led me studying the content of the Zeitgeist Movement and a Resource Based Economy. This led me to terminology like “planned obsolescence”, “technological unemployment”, and “structural violence”. The Zeitgeist Movement advocates for the abolishment of the monetary system and provide access abundance for all through the utilization of technology, however, a transition plan to such a higher level society was never readily apparent, and required humanity to have a significant shift in values. None of these systems seemed attainable or addressed enough of the issues, which eventually led me to conceive of this system.

I think of money like a game played by everyone and only through tradition and the status quo do we consider it immutable. Then I asked myself, can I design a different game, from first principals, that would not have the attributes of our fiat monetary system that cause bad, but retains those that cause good?

# Requirements

If you could start over and introduce a new system which naturally makes the decisions made by the individuals of a society optimized, what sort of attributes would define this optimization? When I asked myself this, I came up with the following:

## 1.1 Money works.

From the sense of using a number owned by an individual to provide an incentive to maximize the amount of it you have to sway personal decision making. It provides a good way of organizing information which leads to the optimal group decision, optimal meaning “making the most money”, yet not necessarily doing what one would consider sustainable or ethical – the latter being the fault I feel needs addressing, which our current fiat monetary system does not provide. This requirement acts more as a constraint to exclude designs which do not use currency or accounts, such as a Resource Based Economy – however, it may allow for transition to such an economy.

## 1.2 Ephemeralization.

Doing more (and better), with less. Imagine how our existing fiat monetary system would work in a world where nearly everything was automated. Today, you need money to survive. This means you need to produce something of utility for someone else, utilize handouts from others, or break the rules to get it. But, what if the level of automation in society made most of the utilities with very little labour? We see this now in the form of wealth distribution culminating to the very few who own the automation, as well as higher unemployment, and under employment. This system should allow for a high standard of living to exist naturally even if you don't have a job. This will lead to a bigger incentive to automate labour, as we remove the need for it. Political priorities would no longer include 'creating jobs' since this only defines a means to an end – providing access to quality utilities for everyone. No more will people fear losing their job because of technological unemployment – the moment a job becomes obsolete, society wins a little bit more.

## 1.3 Competition vs. Collaboration.

The system should incentivize collaboration over competition. In our existing monetary system, an individual can profit more through beating out a competitor as opposed to collaborating, but we can realize more (and more inter operable) resources to all of society if we increased collaboration. This requirement also relates to 1.2 : If someone does produce a utility in competition with you that has attributes sufficiently better than yours that drives you out of the market, you should not lose much of your existing standard of living.

## 1.4 Direct democracy/Decentralization.

The system should allow defining how and what society focuses its efforts on by its individuals. The system should not require a central authority to decide where the members concentrate its efforts on but can allow for some or all of it if desired by the members. Its derivation should arrive naturally through the rules of the system, and not through artificial means like laws or politics. You should not have to sacrifice anything but the time it takes for you to rank the importance of societal matters (as opposed to, say, donations, or fund-raising).

## 1.5 Scarcity.

The system should define the final arbitration for determining who gets access to naturally scarce resources. This means, it should not create artificial scarcity, which our fiat monetary system currently allows by letting sellers set the price to arbitrary limits.

## 1.6 Abundance.

The system should incentivize creating enough goods to meet the needs of all the people on the planet at the highest attainable quality.

## 1.7 Classes.

The system should minimize the different levels of classes in society to reduce the abhorrent behaviour it motivates.

## 1.8 Corruption / Abhorrent Behaviour / Sustainability.

The system should provide a means for individuals to state the definition of corrupt or abhorrent behaviour which would affect directly to the competing power of the individuals over scarce resources (1.5), but would require excessive corruption or abhorrent behaviour to cause someone to fall short of meeting their basic needs (1.6). This behaviour could also include utilizing utilities deemed or measured as scarce.

## Part 2 – Design

As with any system design, now that we have the requirements, how do we build a system that satisfies them? Where do we start? We need a principle design, a core which we can fall back on.

Consider: When a transaction occurs today, why does the amount of money spent by the purchaser have to equal what the seller receives? What if there was a way for us to automatically “print” money whenever someone in society did something we wanted to incentivize and destroy it when someone does something we wanted to deter? We could do this easily with software, but some questions arise:

1. What should we design into the system that would define an incentive and another define a deterrent in order to meet our above requirements?
2. What if the deterrents don't balance out the incentives? This would cause huge inflation or deflation.
3. How would we do this with regular currency? When I give currency to someone, I don't have that currency anymore, and the other individual does – how do we print or destroy the currency during the transaction?

The 'elevator pitch' of this system answers the first two questions quite well:

“Provide an incentive for sustainable abundance and collaboration by printing money based on metrics of the commitments of the individuals of a society. Prevent inflation by using time as a common commodity to destroy money appropriately to make it more useful for times of determining who gets access to naturally scarce resources. Make money less important for needs and more important for wants.”

This leads up to the answer to #3. With regular currency, the only primitive operation one can perform consists of giving someone else currency. When this happens, the purchaser no longer has the currency, and the seller does.



## Registrar

In the Registry Monetary System, there exists a trusted person, group, or computer system known as The Registry. The Registry comprises several autonomous trusted agents known as Registrars, each which has the responsibility of validating the identity of their own members and providing implementations to facilitate the distribution and conversion of the several different types of currencies used during transactions.

All currency has an owner, and that owner never changes. The Registry will provide a means of identifying the member which owns the currency in some way or form, which The Registry must also provide a means for the members to validate. Since this ownership can never change, the primitive operation of giving another member currency, as in the fiat system, does not apply in a Registry Monetary System.

## Exchange

The type of currency all members strive to acquire the most of the Registry refers to as *Exchange*.



This relates closest to what we know as regular fiat currency, as it represents purchasing power.

As mentioned, you cannot give this currency to anyone. To use this currency to purchase something from another member, you present it to a Registrar during a transaction with the selling member.

## Value

The selling member can present an equivalent amount of *Value* currency as *Exchange* presented by the purchaser



and the Registrar has the responsibility of reconciling the transaction. The Registrar would validate the owners of the currencies, and if it could not, the transaction would not occur. Once validated, the Registrar would confirm that the amount of *Exchange* presented by the buyer equals the amount of *Value* presented by the seller. If so, it would **convert** the buyers *Exchange* into *Value*, and the sellers



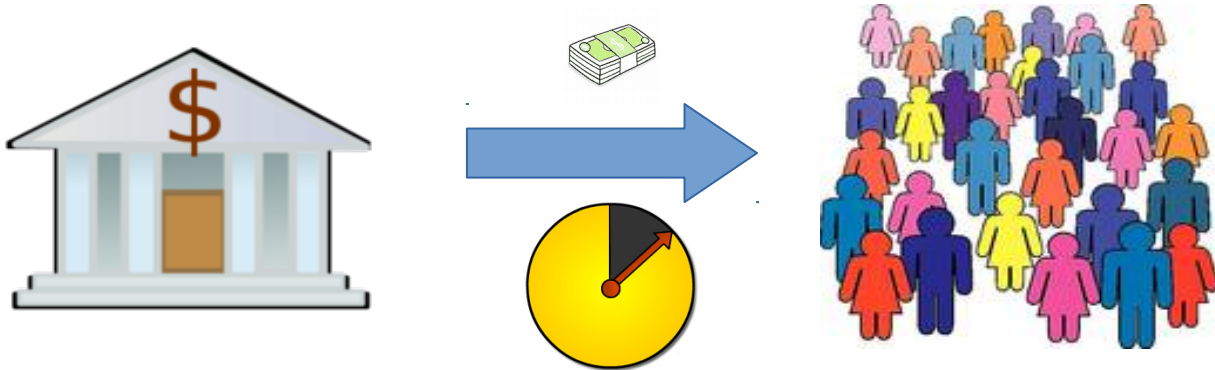
*Value* into *Exchange*. The currency ownership does not change. In this case, however, one could define an equivalent operation for the members to swap their currencies, and update their owners, if such an operation were allowed, since the amount of *Value* currency equals the amount of *Exchange*. This describes the simplest type of transaction that can occur in the Registry. I leave it to the reader to realize that this operation equates to one member giving another their currency like in the fiat system. The seller now has *Exchange*, where the buyer no longer has *Exchange*, but instead has *Value*. The buyer could then use this *Value* (converted from *Exchange*) to present to the Registrar when attempting to sell some future utility to another (or same) member of the Registry and have that *Value* converted back into *Exchange*. The seller, in turn, could use their newly acquired *Exchange* (converted from *Value*) to purchase some other utility from another member.

## Charge

We now introduce a third kind of currency called *Charge*.



Each member would receive the same amount of *Charge* as every other, over the same amount of time, from a Registrar.



The amount of this *Charge* distributed would never change. If the Registry always delivers, for example, 24 *Charge* a day, then it will never adjust this amount. It could adjust the periodicity, for example, to 1 *Charge* an hour, or split them into half, quarter or other fractional amounts, but the amount per unit time would never change.

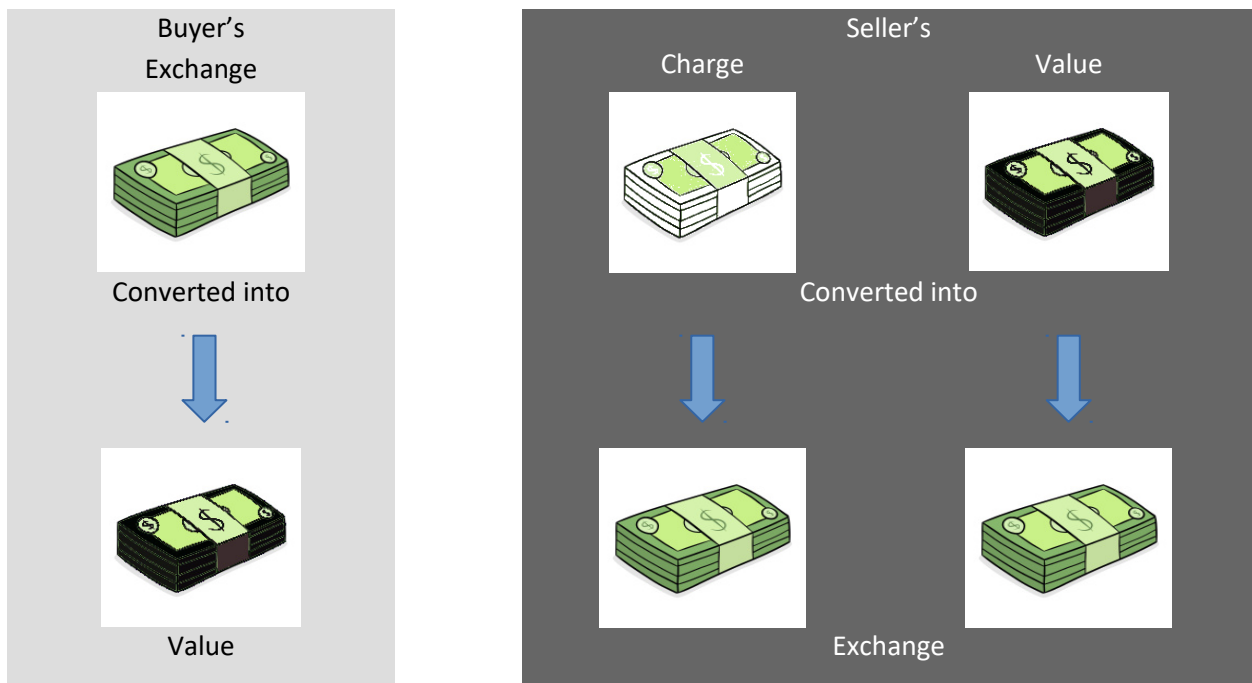
Members can use *Charge*, just like *Value*, to reconcile the price of a utility sold during transactions through a Registrar. The member can present any combination of *Value* or *Charge* to set this price, so long as the purchaser has the will to spend the *Exchange* required to reconcile the transaction. Just like

*Value, Charge* converts to *Exchange* after the transaction. Unlike *Value*, 1 *Exchange* of the purchasers can reconcile more than 1 *Charge* of the sellers, which we elaborate on further.

This design allows for members to relate time as a common commodity. If the seller presents some combination of 5 *Value* and/or *Charge* during a transaction, and members receive 24 *Charge* a day, they can relate that 5 *Value/Charge* to 5 hours worth of that individuals time.

## Transactions

The Registrar would **convert** the sellers *Charge* and *Value* into *Exchange* and give it back to the seller. The Registrar would also **convert** the buyers *Exchange* into *Value* and give it back to the buyer.

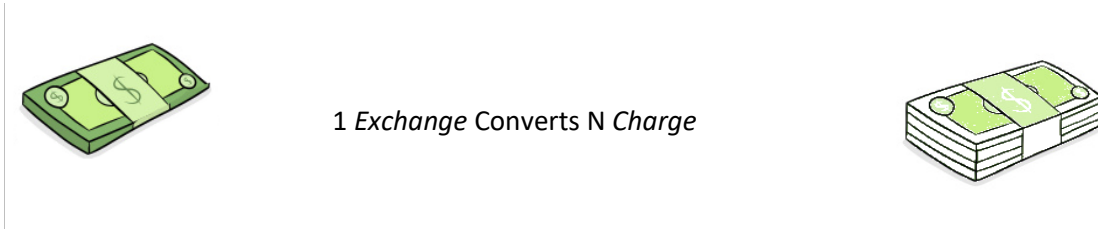


Once this conversion completes, the seller would then deliver whatever utility the transaction represents to the buyer. Note how once *Charge* converts to *Exchange*, it can never convert back.

## Commitments and Printing Money

The Registry has the responsibility of capturing metrics of the commitments of its members. These commitments are categorized by the members and quantified, the details of which are elaborated on in section 3.5. Everything sold in the Registry must fit into one of these categories – for example, Bread. The Registry knows how much Bread has been committed to by all the members at the moment of sale – Let this value equal N.

One *Exchange* presented by the buyer would convert  $N$  *Charge* of the sellers into *Exchange*. For example, with  $N = 3$  (ie: 3 loaves of bread for sale), a selling member could present 3 *Charge* to a Registrar for each *Exchange* presented by the buyer wanting to buy a loaf of bread. One could consider this like 'printing' money, in the traditional fiat sense; giving it to the buyer to reduce their costs.



As previously mentioned, one *Exchange* presented by the buyer converts one *Value* of the sellers into *Exchange* – the Registrar would print no money in this case. *Value* does not consider metrics of supply.



## Example

For clarity, let us follow the conversion of currency in the simple case where there exists only one item for sale, so  $N = 1$ . First, a member, let us call her Sue, receives new *Charge* from the Registrar, and this *Charge* will have annotations on it that will allow anyone to validate that Sue owns it. If Sue loses her currency and some other member tries to use it during a transaction, the Registrar would check the ownership and not allow the transaction. Sue can use her *Charge* when selling something to reconcile with the *Exchange* presented by a buyer, let us call him Bob. Because  $N = 1$ , 1 *Charge* from Sue reconciles 1 *Exchange* of Bob's. Sue's *Charge* becomes converted into *Exchange* and it retains its ownership. This *Exchange* can now become used by Sue to purchase some other utility from another member, who in turn would have to present their own combination of *Charge* and/or *Value* to reconcile Sue's *Exchange*. Sue's *Exchange* would then convert into *Value*. Sue could then use that *Value* to reconcile the price of a subsequent utility she sells to another member, and also use whatever new *Charge* acquired from the regular distribution of *Charge* from the Registry over time. Once the transaction completes, Sue's *Value* would convert back to *Exchange*, and this process repeats.

## Scarcity and Destroying Money

When the seller has exhausted all of their *Charge* and *Value*, and there are still members willing to offer more *Exchange* to purchase their utilities, this represents a moment of scarcity. The Registry was designed to make it more expensive for the buyer compared to how much the seller can receive during moments of scarcity, which one can consider like destroying money of the buyers. To implement this, the Registry allows members to purchase *Transients*, another type of currency, at the price of one

*Transient per Exchange.* Just like any other time members use *Exchange*, they are converted to *Value* once they are used to purchase this *Transient* currency. Once purchased, the *Transient* currency can have an owner other than the member who purchased it, such as the seller of the scarce utility. Members can relinquish their *Transient* currency to a Registrar to purchase *Transient Exchange*, yet another type of currency. Members can present *Transient Exchange* at any point they can present regular *Exchange* to a Registrar, however it does not convert to *Value* upon use, the Registrar instead destroys the *Transient Exchange*. To purchase one *Transient Exchange*, the member must relinquish an amount of *Transient* currency equal to one more than the total amount of *Transient Exchange* they currently own, making the price become successively more expensive for each *Transient Exchange* they purchase. The details of this situation are discussed in section 3.9 and 4.8. below.

## **Inflation, Deflation and the Direct Democracy**

With the design of the currency described above, the concept of Inflation and Central Banks no longer exists – no external force such as a government or other agency can or needs to increase or decrease the money supply (through interest rate adjustments and loan approvals) to attempt to keep inflation at an acceptable level to motivate economic growth. As the money supply increases each time a non scarce utility becomes sold, the members would use this currency to compete with each other for turns over those utilities which remain scarce, which reduces the money supply. This would form a natural equilibrium which requires no outside intervention. However, accumulating a high amount of wealth to do the equivalent of what we call Capital Investments in our existing system does not lead itself very well with the currency described at this point.

This allows for the introduction of two other forms of currency – *Progress* and *Reserve*. Each member receives the same amount of *Progress* and *Reserve* currency as they do *Charge*. Members can use *Progress* as well or instead of *Exchange* when purchasing during transaction reconciliation, but this destroys the *Progress* when used, similar to *Transient Exchange*. Members cannot spend this directly, however – they allocate it towards *Projects*, created and owned by members, that implement and trace to solutions to *Problems* defined by the members. When members have no desire or affinity towards particular solutions, they can also allocate their *Progress* towards *Problems* directly, which the Registry has the responsibility of distributing to all the *Projects* the *Problem* relates to based on their popularity, as defined in section 3.7. Members can spend the *Progress* that was allocated by members to *Projects* they own.

These *Problems* can also have *Surveys* traced towards them, which, like *Projects*, members create and own. *Surveys* trace to one or more utility categories that members have committed to, as part of the metrics of supply for *Charge* reconciliation. Members can allocate *Reserves* to these *Surveys* or to their traced *Problems*, and like the distribution of *Progress* from *Problems* to *Projects*, get distributed from *Problems* to *Surveys*, the amount based on the *Survey's* popularity. A *Survey* owner can use *Reserves* during any transaction of any members to destroy the purchasers *Exchange*, *Transient Exchange* or

*Progress* when purchasing a utility in the category the *Survey* traces to. This provides a direct means for members to state what defines abhorrent behaviour such as waste, criminal activity or discrimination, and Scarce Resources such as particular forests, or endangered species. They can also use the *Survey* currency to destroy *Progress* currency before the distribution of *Progress* from *Problems* to *Projects*, in effect reducing their popularity which reduces the amount of *Progress* that *Project* received from the distribution. This allows for members to 'vote down' on particular solutions if they feel they will not work or are behaving poorly.

*Projects* and *Surveys* have owners, and they have an incentive to publish their performance to the members, but are not required to by the system. Members could use this information to determine whether the implementation of the *Project* and *Survey* has a sufficient impact on the change they would like to see in their society. For example, if there are members of the police force at a particular precinct abusing their power, members could simply not allocate their P\$ or R\$ towards that precinct. If there was a *Project* that was created to investigate the feasibility of some technology and it has been several months without sufficient results, members could choose to allocate their P\$ towards some other *Project* that may get better performance. Some people may even choose to allocate their P\$ and R\$ towards what we would call political parties today, where they would trust those members to allocate their P\$ and R\$ specifically towards the things that are in the party platform. This would define a member who has more of an affinity towards a representative democracy than a direct one.

## Part 3 – Definition

This section describes the definition of the components used to implement The Registry Monetary System, without much explanation as to why in order to keep the description clear and as brief as possible. For a description of the motivation of each components design, see the further sections.

### 3.1 Registries

The registry monetary system starts with a top level registrar. Anyone can start a new registry by registering with the top level registrar, who also has the responsibility of uniquely identifying individuals, as well as the other responsibilities mentioned below. Any individual in a society can choose to join one or more registries.

### 3.2 Charge

The top level registrar has the responsibility for distributing, to each registered individual, a fixed amount of currency called Charge (denoted as C\$) over some amount of time. They will have annotations on them describing the identity of the owner to prevent someone else from using it during a registered transaction (described in 3.6).

### 3.3 Exchange

The registry uses the term Exchange (denoted as E\$) to represent the currency required for the purchasing side of a transaction. All Exchange has an owner, as annotated by the registrar, and cannot have its ownership changed.

### 3.4 Value

The registry uses the term Value (denoted as V\$) to represent the currency required for the value of the cost of goods side for a transaction. Like Exchange, Value has an owner annotated by the registrar, and cannot have its ownership changed.

### 3.5 Commitments

Any individual can register a commitment to one or more registries. The registries have the responsibility of maintaining an inventory or survey of all commitments of its individuals. Individuals categorize these commitments and, in agreement with each other, share categories when they are of sufficiently equal utility.

A commitment has quantity. Due to natural law, labour and information can only have a unit quantity, while physical utilities can have more. For example, a security guard can commit to monitoring security cameras. They cannot, however, commit to monitoring 5 security cameras, because they are only one individual. If someone can monitor more cameras at once compared to someone else, that does not

affect the quantity, it simply defines a performance, or quality, metric, this information which the purchaser can use when deciding whom to purchase the commitment from. Someone can, however, as a recruitment officer, offer 5 security guards to monitor cameras, which has quantity. A camera retailer can commit to offering 5 cameras, which obviously has a quantity.

### 3.6 Transactions

An individual has the ability to query the supply of commitments and their categories from a registry. The members of a transaction have the ability to reconcile the transaction through the registry as follows:

The seller can present C\$ and V\$ to set how much the sale of the utility will earn them in E\$. Once sold, the registry converts the C\$ and V\$ into E\$ and gives it back to the seller. The seller can present as much C\$ and V\$ as they would like so long as the purchaser backs them up with an amount of E\$ they have the will to spend given the following equation:

Let S = Number of units in the category as committed by all individuals in that registry

Let  $E_c\$$  = Amount of E\$ the purchaser has the will to spend that the seller will reconcile with C\$

Let  $E_v\$$  = Amount of E\$ the purchaser has the will to spend that the seller will reconcile with V\$

Let E\$ = Total amount of E\$ the purchaser must present to purchase the utility

$$E\$ = E_c\$ + E_v\$$$

$$E_c\$ * S = C\$$$

$$E_v\$ = V\$$$

The registrar will validate the identity of all currency used in the transaction, and the transaction will not occur if the validation fails.

Once sold, the registry converts the purchasers E\$ into V\$ and returns it to the purchaser.

Note: A registered transaction never involves exchanging currency between parties, except during times of Scarcity (see 3.9). It is processed by the registrar by converting existing currency and returning them to their owners.

### 3.7 Progress

The top level registry also has the responsibility of distributing the same amount of Progress currency (denoted as P\$) as Charge (C\$) to every individual over the same amount of time as used for Charge (C\$). It has annotation for ownership to prevent misuse like all other forms of currency.

Any individual can state a Problem to the top level registrar. Each individual in a particular registry can start a Project which traces to one or more top level Problems, or to some other parent Project in that same registry. A Project describes a particular solution to its related problems or a variation or constraint to a design of its related Project.

Any individual can contribute any amount of their P\$ towards Projects in registries they are members of, or towards Problems registered in the top level registrar.

The top level registrar has responsibility to distribute evenly the correct proportions of P\$ allocated towards Problems to each Project which traces to it based on the P\$ allocated to them, the formula for which has the following definition:

Let Pr\$ = The amount of P\$ allocated towards the Problem

Let Rp\$ = The amount of R\$ allocated towards the Problem

Let Pi\$ = The amount of P\$ allocated towards Project i

Let Ri\$ = The amount of R\$ allocated towards Project i

Let Rj\$ = The amount of R\$ allocated towards Survey j

Let Pj\$ = The amount of P\$ allocated towards Survey j

Let Pt\$ = The sum of all Pi\$ minus the sum of all Ri\$ towards the Problem.

Let Rt\$ = The sum of all Rj\$ minus the sum of all Pj\$ towards the Problem

P\$ allocated from the Problem to Project i =  $(Pi\$ - Ri\$) * (Pr\$ - Rp\$) / Pt\$$  - rounded down.

R\$ allocated from the Problem to the Survey j =  $(Rj\$ - Pj\$) * (Rp\$ - Pr\$) / Rt\$$  - rounded down.

The individual who created the project can use the P\$ in that project instead of their own E\$ wherever E\$ are used in the registry, for example, to convert C\$ or V\$ into E\$ - including their own. In the case where the owners C\$ are converted with P\$, the supply must, by definition, equal 1, as the utility, in this case, equates to managing that specific project. Hiring someone else to perform a task required for the management of the project has metrics involved. The P\$ are destroyed when used.

### 3.8 Reserves

Like P\$ and C\$, the top level registrar also has the responsibility of distributing Reserves (denoted as R\$) to every individual, the amount, and periodicity equal to that of P\$ and C\$.

Every category published for a commitment can have R\$ allocated towards it by any individual. Any individual can create a Survey in a Registry which traces to this scarce utility which has the responsibility to build the appropriate infrastructure to manage taking metrics on the supply of some set of scarce resources in an area managed by a registry. Any individual can allocate their R\$ either directly towards these top level scarce utilities or towards particular Surveys in Registries.

The individual who created the Survey can spend (and therefore destroy) the R\$ allocated to their project to increase the amount of E\$ for any transaction in the registry which uses the scarce utility as the project owner deems fit. The registrar does not convert those E\$ into V\$ - the registrar destroys them. One can also use R\$ to destroy P\$ in any particular progress project. This allocation occurs before the distribution of P\$ allocated from Problems to Projects, reducing that projects popularity in the algorithm described in section 3.7.

Like P\$, the Registrar allocates R\$ to top level Scarce Utilities evenly to each Survey based on their balance in relation to the total amount of allocated R\$.



### 3.9 Scarcity

Let us introduce a new type of currency called Transients. Anyone can purchase one Transient (T\$) from the Registrar for one E\$, and give it to anyone else including yourself, becoming annotated for ownership. The registrar does not have the ability to transfer this ownership, similar to E\$ and V\$ - once assigned, it can never change.

Once the member accumulates enough T\$, the Registry will convert those T\$ into Transient Exchange (E<sup>T</sup>\$) as described below.

One can use E<sup>T</sup>\$ just like E\$ in the registry, but the registrar destroys them when used, and does not convert them into V\$.

The registrar has the responsibility for keeping track of the amount of E<sup>T</sup>\$ owned by individuals (they must, by definition, in order to validate the identity of the currency when used). Once an individual accumulates N T\$, the Registry will convert them into 1 E<sup>T</sup>\$, where N equals the total E<sup>T</sup>\$ owned by this individual, which makes the next E<sup>T</sup>\$ cost 1 T\$ more.

The E\$ used to purchase the T\$ becomes converted to V\$ like all other times it was used. Similarly, any E<sup>T</sup>\$ used to purchase T\$ become destroyed.

## Part 4 – Explanation

This section was written to help give an initial explanation to the design described above. First, we enumerate each design and describe how it traces to the requirements we would like to solve.

### 4.1. Registries

This defines the solution to the problem of assigning the component that takes responsibility for actually printing or destroying the currency during each transaction, and ensuring the rules of all of the other components of this system are satisfied. The implementation could comprise a computerized system or simply a ledger in a book at a central institution. This design spans all requirements of the system. Examples of registries can include local communities, urban areas, cities, countries, states, corporations, or even the world.

### 4.2. Charge

If you don't consider Transients, everyone would have the same amount of \$ (the sum of their C\$, E\$ and V\$) as everyone else, unless someone was born or died (see the section on Death and Inheritance below). The C\$ periodically distributed defines this value, as they are merely converted and never destroyed. This defines an upper limit for how much currency an individual can own before it becomes more expensive to get more currency (in the form of Transients, see 3.9). This prevents inflation and

defines a common commodity of time because everyone would get the same amount in the same periodicity. For example, if the periodicity of Charge was C\$24 per day, we could say that \$1 equals 1 hour of someone's time. This provides a design for satisfying the requirement of abundance (R#1.6 ) and (R#1.7 ) reducing the span of classes when considered in the context of its use in transactions.

### 4.3. Exchange

This currency equates to the unit of account everyone would strive to get the most of, which defines a design which implements the first requirement of using money because it works (R#1.1 ).

### 4.4. Value

This currency keeps track of cost of goods, and without it, would reduce the value of Exchange and Charge. (R#1.1 )

### 4.5. Commitments and Transactions

By keeping track of the commitments of individuals, this gives us metrics on the supply of all utilities of society. We can now make those utilities which we can make an abundance of (R#1.6 ) cheaper for the purchaser. This also improves collaboration (R#1.3 ) since, if the utilities in question made by separate individuals are close enough to each other in attributes and quality, it increases the supply, making it that much more easier to sell, for everyone involved. Yes, people may not end up purchasing your utility, but when they do, you will quickly convert all of your C\$, as the example below will demonstrate. Note: The author assumes that there would exist an incentive to keep the cost the same for the purchasers for each utility sold, or at least very close to each other. For example, the sellers would not want to have the purchaser pay E\$1 for the first utility, E\$2 for the second, E\$3 for the third, etc. To keep the price the same for each utility sold, the following equation was derived to determine the optimal price for the seller to set.

Let C = C\$ of seller

Let S = Supply of how many YOU have to offer (not everyone in same commitment category)

Let A = Optimal amount to charge (same for each unit), so seller gets most E\$ such that A has the same value for each unit sold.

$$A = 2 * C / (S * (S + 1) )$$

The following table shows that this formula utilizes all C\$ when the last utility becomes sold.

The reader can verify that if we set the price to E\$1, and the supply equals S, then the C\$ required to maximize the amount per sale without changing the price for each transaction equals:

SUM(i) for all i between 1 and S.

This equates to  $F(S) = (S * (S + 1) ) / 2$

$$A = C / F(S)$$

We will see that  $A * F(S) = A * F(S - 1) + A * S$

Let's assume P = 2, C = 56 and S = 7. This means the seller has C\$56, sets their price to E\$2 per unit, and commits to selling 7 of them. For each transaction, the seller converts A \* S C\$ into E\$.

**Transaction Example 1 – No competitors**

S	F(S)	A * F(S)	A * S	Total C\$ converted	A * F(S- 1) + A * S
7	28	2 * 28 = 56 (= C)	14	14	2 * 21 + 14 = 42 + 14 = 56
6	21	2 * 21 = 42	12	26	2 * 15 + 12 = 30 + 12 = 42
5	15	2 * 15 = 30	10	36	2 * 10 + 10 = 20 + 10 = 30
4	10	2 * 10 = 20	8	44	2 * 6 + 8 = 12 + 8 = 20
3	6	2 * 6 = 12	6	50	2 * 3 + 6 = 6 + 6 = 12
2	3	2 * 3 = 6	4	54	2 * 1 + 4 = 2 + 4 = 6
1	1	2 * 1 = 2	2	<b>56 (= C)</b>	2 * 0 + 2 = 0 + 2 = 2

The reader should see that if there exists only one seller in the category, then the formula does not use V\$ without increasing the price per unit, which may set the price too high for people to feel willing to purchase it, particularly because of the common commodity of time people could relate the price to. It would make sense to introduce some amount of V\$ into the price to recuperate any actual cost of goods.

With multiple sellers, S increases for each row in this table. Once the sellers C\$ becomes exhausted, then the seller can then start setting the price by using their V\$ acquired through cost of goods, and for, well, sustaining their livelihood like competing for naturally scarce utilities (see 3.9). Let us change the example so that another individual sells the utility along with the original sellers 7. Keep A = 2 and C= 56, but now we use S = 8. Note how A equals 2 still because the sellers' commitment remains 7 (but the seller could use 8 if they wanted – this merely states one possible move of the game).

**Transaction Example 2 – With Competitors**

S	F(S)	A * F(S)	A * S	Total C\$ Converted	C\$ Left	A * F(N- 1) + A * S
8	36	72	16	16	40	72
7	28	42	14	30	26	42
6	15	30	12	42	14	30
5	10	20	10	52	4	20
4	6	12	8	*** ???	*** ???	12

Note how, by the time there are 4 total utilities left (3 owned by the seller), there does not exist enough C\$ left to compensate for the price – the seller needs C\$8, but only has C\$4 remaining. The seller would then, at this point, use C\$4 and V\$1 to reconcile the price. Each remaining transaction would simply convert V\$2 to E\$2. What if the seller has no V\$ left? Well, there exists a couple of choices – the seller can buy something they want, then they will have V\$ to charge back. But, the purchaser may not want to have their E\$ held up until that happens. Another option exists to have the purchaser spend their E\$ to purchase Transients and give them to the seller. That seller can then use those Transients to purchase Transient Exchange (E<sup>T</sup>\$), the cost of each equalling one more than the last.

I leave it to the reader to realize that by having more supply committed to the utility by multiple sellers, the prices drop significantly but sellers will still very easily have the ability to convert all of the C\$ and more V\$, so long as the REAL demand for the utility exists in society, and not the artificial or class based demand, which satisfies the class requirement R#1.7 and removing artificial scarcity defined in R#1.5 . Let it also show that this makes it much easier for an individual to enter a market compared to the fiat monetary system economy. When a single individual attempts to compete in a market dominated by a large corporation, they usually cannot compete with the larger companies lower prices while staying profitable. The registry does not exhibit this limitation.

To assist in satisfying the Ephemeralization requirement (R#1.2 ), there does not exist a means to validate the category of the commitment other than labour, information or physical utility, on purpose. The registry does not prescribe, for example, that someone could not attempt to sell the 'Nothing' Labour utility or some permutation of it. 'Nothing' has just as much validity as any other utility. Once enough automation enters the economy requiring less and less work by individuals of the registry, more and more people should commit to doing nothing, as this becomes the optimal move in the registry to make the most E\$. This would involve exchanging each others unused C\$. Selling something of utility will always yield more E\$ than exchanging C\$, meaning those whom actually provide value to society get a better chance to access scarce resources than those who do not. See section 6.11 for an example.

## 4.6. Progress

The design of Progress currency implements the Direct Democracy requirement (R#1.4 ). It also provides a design for the Ephemeralization requirement(R#1.2 ) by allowing people to use the P\$ to sustain themselves, as it does not prescribe that you cannot do this. It does deter it, though, by requiring a unit supply as opposed to metered supply when purchasing your own C\$. The design of higher level problems was chosen so that people do not state the solution, merely the issue. They can choose whom to trust in providing the solutions by allocating Progress to implementations directly. It was considered to require some sort of credentials, however, the Reserve currency implements this sufficiently. For example, if someone wanted to contribute towards a Project without any credentials, someone who has the responsibility of making sure that doesn't happen could require the person to destroy some of the P\$ in the process.

Examples of Problems can include garbage, transportation, education, health (including old age care), corporations and most any institution currently managed through government. Note how this design allows for tighter control of what society should focus its efforts on from the individuals perspective. As an example, if there exists a school which you would like to see have more funding because your child intends to go there, allocate your P\$ towards that particular school (which a Project would manage, the principal having responsibility for it). If you don't agree with institutionalized schooling, or don't intend to have children, then allocate your P\$ towards something else.

If you don't have engagement in where your P\$ becomes allocated, the registry allows for this, which relates to the requirement of allowing for centralized control if requested by the members in R#1.4 . Simply give it to someone else you trust, or you believe shares your values. Use your P\$ during times of scarcity, or use it to vote for some sort of overarching political conglomerate (also known as a political party), however society decides to utilize this game.

## 4.7. Reserves

R\$ directly implements the requirement for sustainability (R#1.8 ) by allowing individuals to state what utilities require it. They also provide a means for deterring abhorrent behaviour such as those which the culture in the registry deem unacceptable, or naturally dangerous such as aggression, gambling, gluttony/wastefulness or substance abuse. It does not state how individuals will manage the R\$, just that they can. Consider the example of our existing police force. If you decide to act in a violent manner, the police, who receive payment through P\$, also have the authority to utilize R\$ to reduce the spending (and charging) power of the individual exhibiting the behaviour.

## 4.8. Scarcity

Scarcity occurs when we have competing members in a transaction for a particular utility. Like in the fiat system, this allows for the seller to increase the price since each competitor would pay it, and the one willing to pay the most wins (which traces to R#1.1 ). With the ability to purchase Transients (T\$), there now does not exist an upper limit to the price a purchaser could pay, but as we will see, the seller

receives less and less  $E^T\$$  as more  $T\$$  becomes purchased. If a seller exhausts all of their  $C\$$  and  $V\$$  to set their price, and there still exists competitors willing to pay more, those competitors could purchase  $T\$$  and give them to the seller. The seller can then use this first  $T\$$  to purchase their first  $E^T\$$ . For the seller to receive the next  $E^T\$$ , the purchaser would need to purchase 2  $T\$$  to give to the seller. For each subsequent  $E^T\$$  to give to the supplier, the purchaser would have to spend one more  $E\$$  than the last time.

With this design, it will reduce the level of classes (R#1.7) by making it difficult for someone to accumulate a high amount of  $E^T\$$  compared to the average of the members, and make it easier for someone who has a low amount of  $E^T\$$  compared to the average to catch up to everyone else. In today's fiat monetary system, the seller of a scarce utility receives the most currency during times of competition. The fiat system price curve literally states that if by setting the price of a utility lower but selling more would generate less profit to the seller, then the seller should not produce the extra units (creating artificial scarcity). With the design described in section 3.9, as individuals compete over **naturally** scarce resources, they will have to spend more and more of their  $E\$$  purchasing  $T\$$  and who can purchase the most wins, relating directly to the natural and arbitrating requirement of R1.5. However, the seller will not get nearly as "rich" as they could have had they instead created an abundance of the utility in question and sold them at a rate which correlates to what the seller purchases over time, and charging slightly more than the optimal price they should set as defined in section 4.5., which related to the incentive for abundance in R1.6. Consider the registry based price curve:

TODO

Notice how the cost of  $E\$$  to the competitor increases with a quadratic curve as the amount of  $E^T\$$  the individual will receive exceeds the average wealth of the members. By setting the limit this way, the  $E\$$  are spent more towards the competition and less towards getting the owner (seller) of the scarce utility rich.

Next, we enumerate the requirements and describe how the design satisfies each.

TODO – maybe not, since the Relations section describes most of it

## Part 5 – Examples

### 5.1 Mathematical

This section describes example use of the registry monetary system with hypothetical actors and weighted values. It acts more of a proof than an example, but condenses the example better than section 5.2.

Let us use the following notation.

Let  $I = \{I_1, I_2, I_3 \dots I_n\}$  label the individuals of a society.

Let  $O = \{O_1, O_2, O_3 \dots O_n\}$  represent what individual I offers as a commitment to society.

Let  $C = \{C_1, C_2, C_3 \dots C_n\}$ ,  $V = \{V_1, V_2, V_3 \dots V_n\}$ ,  $E = \{E_1, E_2, E_3 \dots E_n\}$ ,  $P = \{P_1, P_2, P_3 \dots P_n\}$  and  $R = \{R_1, R_2, R_3 \dots R_n\}$  represent the balance of the individuals account for Charge, Value, Exchange, Progress and Reserves, respectively.

...TO DO... Describe the axioms of the actors of the game and demonstrate how a program can be written to simulate the game.

## 5.2 Real World

A local rural community of 30 families in a residential neighbourhood agrees to start their own registry (and in this case, the first registry). Every week, the appointed registrar, Jason, gives everyone  $24 \times 7 = 168C\$,$  because the members would like one C\$ to represent one hour of an individual's time.

On the first day, a gathering is started where the members mingle, and discuss problems and commitments with each other casually. The registrar hands out the first C\$, P\$, and R\$ in the form of bills, annotated for ownership. Jason places a white board in the center of the meeting area where people can write new problems, and state categories of things deemed scarce, without committing any P\$ or R\$ to them.

The Problems are posted, which consist of:

Lack of:

1 – Child care

2 – Transportation into the city

3 – Lawn care

4 – I have no E\$

No scarce resources were brought up.

These problems are recorded by Jason (the registrar), and people are given the chance to come up with ways to address these problems.

2 Different individuals commit to providing day care services in different ways: Joan says she will offer to coordinate herself and as many others as she can and provide a ratio of 3 – 1 child to care giver ratios. Stacey offers babysitting services for up to 4 kids at a time but does not offer coordination.

Stacey and Joan have a discussion, and Stacy agrees to allow Joan to coordinate her commitments for her. A single project, owned by Joan, is created and traced to the problem of Child care. Joan creates a new category in the registry for child care workers and publishes a supply of 2 individuals, herself and Joan. She also creates another category for Child Care coordination, with a supply of 1, herself.

Five members, Alex, Jacob, Meghan, Arthur, and Jenny state that they drive into the city at various times in the day and feel willing to drive anyone else into the city and back, at varying times and places.

Each present different times and different locations. Johnathon notices this and offers the services to coordinate this effort, but offers no rides himself. Alex, one of the other members who offered rides, decides to offer the same coordination service.

Alex and Johnathon agree to work together. Johnathon knows how to write or use software to make this easier, and promises to teach Alex how to use it, as a service, but will only charge if they sell enough rides. Alex agrees.

Arthur, who does not know how to use computers and despises them, decides to create his own service for coordinating the drivers and will use the telephone and paper to do so. Alex and Arthur get into an argument about their perceived inefficiencies, but Arthur feels there are people who just don't want to use a computer and won't use it to register their rides. They go their separate ways. Arthur commits his own, separate project for coordinating rides into the city.

The Projects created which trace to the commuting problem are:

Arthur's commuting service

Alex's commuting service

No one else decides to make projects for the top level requirement, as they see there are enough projects for managing the demand in the system already and really don't feel like doing it.

The commitments include:

Commuting coordination: Supply 2

Driving:

Tuesday, 820, towards the airport: Supply 2 (Jacob and Meghan both work by the airport, but need to be home at different times)

Tuesday, 500, from airport back into the village: Supply 1

Tuesday, 430, from airport back into the village: Supply 1

...etc

Jason realizes that the amount of data required to keep track of all these commitments for commuting overwhelms him. So, Jason publishes a new Problem stating he needs help keeping track of all the commitments for all commuting problems in the registry. Alex feels more than willing to track all of this data for Jason, so Alex makes his project trace to that problem as well as the committing problem and agrees to help Jason.

Several other members post individual commitments for various different categories that were not direct problems. These include mowing lawns, building gardens, applying fertilizer, weeding, loaning various tools and planning. Each planner registers their own project to do the coordination of effort, which relates to the Lawn Care Problem.

Next – the members allocate the P\$. With 30 members allocating their P\$, and each member receiving P\$168, it was distributed as follows:

Child Care: P\$2352

Commuting: P\$1680

Lawn Care: P\$840

Track driving commitments: P\$168 (all from Jason)

Then, Jason allocates the P\$ to each project as defined by the rules of the registry – evenly to each project.

Joan gets all Child Care P\$ to allocate as she sees fit as she is the only member in the registry with a project traced to this problem.



Alex and Arthur each get P\$840 for their commuting services projects

Each individual who offered planning services for Lawn Care each receives their own P\$ evenly distributed from the P\$840.

Alex gets an extra P\$168 to track all the data in the registry for commuting.

Jason takes the time to use a spreadsheet he built to print out all the bills needed for everyone. The bills all have everyone's name on it. Jason told people at the registry meeting that they can choose to have their C\$ transferred to another owner at anytime, in case there was some scarcity they wanted to compete for. Jason also put a date on each bill, stating that they he would only reconcile them on or after the day it was made for. The first C\$24 for the first day, the next C\$24 for the second, etc. The same was true for the P\$. He also generated a numerical code hashed from the member's name and date the money could be used and wrote it on the bill. He could run this number backwards to decrypt the actual name and date embedded in it, with his fancy spreadsheet he made (which had a private key buried inside it). Since there were no scarcity projects defined, Jason did not bother printing any R\$. Then, the members are set loose to play.

Members post various commitments that do not relate directly to projects, such as:

Advertising

Access to resources they own that they are willing to share, like photo copy machines, musical instruments, DVDs, excess food, etc.

Cooking / Cleaning services

Arthur takes his Progress currency in his Project and uses them to purchase advertising and photocopying services from the published registry from Penny. Arthur and Penny go to Jason to get Penny's C\$ converted to E\$. Jason takes a look at the metrics and sees Penny was the only member offering photocopy services. He asks Penny how much she would like to make, and she says "Well, as much as I can!". Since it's the first day, Jason tells her she can use all C\$24 of the first registered day and tells Arthur it would cost his P\$24, and that would be all the P\$ he could use today. Arthur agrees. Jason validates all cash used by decrypting the date and names. He tells Arthur he gave him a bill for the wrong day, and this was corrected. Jason then destroys the P\$24 of Arthur and converts Penny's C\$24 to E\$24 by writing a new special numerical sequence over the bills.

Arthur then takes the opportunity to approach Jason for contact information for those who committed to commuting, which is a requirement for stating a commitment. Jason, knowing how the registry should be working, asks Arthur to convert C\$3 of his (Jason's) to E\$3 to cover the costs of the information. Outraged, Arthur told Jason what he really thought of this registry (in not so many kind words). Jason reminded Arthur of how the currency is supposed to be used for scarce resources, and Jason, being extremely busy with everything he is doing, feels his time was worth this much. Arthur calms down and tells him that he has no exchange to offer as he spent all of his P\$ for the day already. Jason didn't want to spend any of his P\$ either yet – but, Jason, being a registry guru, knows exactly what to do to kick things off. He tells Arthur that, there is nothing in the registry preventing people from exchanging empty utilities with each other. All they have to do is commit. Jason commits to the first 'null' utility, and calls it 'first come first serve'. He tells Arthur about it and tells him he can go find other

people who want E\$ but have nothing to offer. So, he does, as well as Jason, and 4 other individuals agree to this null exchange. The order was as follows:

Jason, Arthur, Emily, Carole, Jayden, Charles and Parker.

This has a supply of 6 individuals, offering 'null' in this category with each other. The first exchange occurs.

Jason offers to sell C\$6 worth of nothing. Since the supply is 6, it costs Arthur  $6/6 = E\$1$ , which he doesn't have. But, Jason promises to buy E\$1 from Arthur at the same time. Jason reconciles this, as it is allowed by definition as an exchange.

Jason's C\$6 converts to E\$6. He then uses E\$1 from that E\$6 to buy C\$5 from Arthur (because the supply is 5 at that point). So now, Jason has E\$5, V\$1 and C\$6 less than what he started (which was  $C\$24 - C\$6 = C\$18$ , for the day – there is still more C\$144 more for the rest of the week). Arthur has E\$4, V\$1 and C\$5 less than what he started ( $C\$24 - C\$5 = C\$19$ ). This process continues down to the last member, until only 2 are left where it would not create any new E\$ into the system by continuing. Arthur, with his new found wealth, agrees to offer the E\$3 to Jason. Jason backs it up with V\$1 and C\$2. Arthur's E\$3 gets converted to V\$3 and Jason's V\$1 and C\$2 gets converted to E\$3, all validated through Jason's spreadsheet. Note that, the supply was 1 for this utility because Jason was the only member of the registry who offered this information as a utility (because Alex is still building the system to do it automatically).

Arthur and Penny go and print his flyers, and Arthur places them throughout the community.

Alex decides to use social media and the internet to publish the information for requests and supplies of commuting services. He does this all his own, and also builds the appropriate infrastructure to compute the registry currency appropriately for Jason.

All the rest of the day Alex was working, Arthur was receiving phone calls for driving services from his flyers. Arthur was able to organize 3 rides for Emily, Carole, and Jayden to the airport and back, and decides to meet at the end of the day at the registrar office (Jason's house), before his competitor Alex takes his customers away.

That evening, Arthur, Emily, Carole and Jayden arrive at Jason's to do the reconciliation. Upon arrival, Jason says that the supply of people offering rides at the time were 2. Jason says to Emily, Carole and Jason they can choose to contact Alex to see if they want him to organize the rides instead of Arthur, but they said no – they had agreed to purchase from Arthur. Jason asks which passenger was offered a ride first. This was Emily. Jason asks Arthur what he would like to make. Arthur says, "well, as much as I can!". So Jason asks Emily how much she is willing to pay. She says, "well, as little as I can!". Using time as the common commodity, Jason explains that it takes roughly 30 minutes to drive to the airport, and one \$ represents one hour based on the C\$24 everyone receives a day. If we consider the time Arthur has taken to organize this, plus wear and tear, spending anywhere from E\$3 to E\$6 seems worth it per ride. Emily says, ok E\$3. Jason crunches the numbers from the supply: There are two people offering rides at that time, Alex and Arthur. So, Arthur's time as a ride coordinator has a supply of 2. If Arthur offers C\$6, it would cost Emily E\$3. Arthur knows he wants to max out his C\$ today, and also has to pay Meghan. Arthur still has C\$19 left over from the day. He says, no deal. Jason says so to Emily. She bumps her offer to E\$6. This would allow Arthur to convert his C\$12 to E\$12, but he still wants more

and says no deal. Emily is starting to get angry. Jason explains that this is the regular “supply and demand” game at play here. If Emily isn’t willing to spend more E\$ to get what she wants, then the demand or supply just isn’t high enough to satisfy both supplier and consumer, just like in the fiat game. Sure, Emily still wants the ride, but not at the expense of more than E\$6, which is like someone working for 6 hours in a day. Jason asks why. Emily says she feels like she’s being taken advantage of. Arthur feels that the work of getting someone else to fill the spot would cause too much effort and he would lose out on the business otherwise and agrees on the E\$6. Jason reconciles.

Emily is short E\$3 (she has E\$3 already from the null utility game she played earlier in the day). She asks Jason to set up a null trade again, this time she’s first, with Carole next, then Jayden, Parker, Charles, Arthur, and Jason last – the order agreed upon by the members at play. After the null trade, Emily has E\$8 (the E\$3 she started with from the last null trade, plus the E\$5 she made on this trade), V\$2 (V\$1 from the last null trade, plus V\$1 from this one), and C\$14 left over from the days worth of C\$24. Emily offers the E\$6. Arthur backs it up with C\$12, and that converts to E\$12. Emily’s E\$6 converts to V\$6. The transaction has finished, but we still have to finish with Carole and Jayden.

Carole has E\$6 and agrees to pay the same as Emily. Arthur, at this point, has C\$7 and V\$4 left. Arthur reconciles the cost with C\$6 (deciding to leave that last C\$1 for later), which reconciles the E\$3 of Carole. He then uses his V\$3 to reconcile the rest. Carole’s E\$6 converts to V\$6, and Arthur’s C\$6 and V\$3 converts to E\$9, and that transaction finishes.

Now Jayden. Jayden only has E\$3 from all the null trading happening. Arthur still needs E\$6, so another null trade becomes organized, so Jayden now has E\$6. However now, Arthur realizes he has no more \$ to reconcile the price – he has only V\$1 left and doesn’t want to use his C\$1 with a supply of 2 because he would waste one. He asks Jason - “This isn’t working! I want more money, but I can’t back it up! I mean, I can back up one more if I use this one extra C\$, but with a supply of 2, I’d be wasting one right?” “Right – the Registry calls that fragmentation, and it’s going to happen.”, Jason replies. “Fragmentation, sure, whatever...so what do I do now?! This game is broken.”, Arthur asks with a raised voice. “Try to calm down Arthur, this will work out.”, Jason replies. “We’ve essentially reached a moment of scarcity for your services. There are more people willing to purchase your ride services than you have time to back it up – the Registry allows for this. Carole can purchase a Transients from me for one E\$ and give it to you.” “A what?”, replies Arthur. “A Transient, or T\$. You can use T\$ to purchase Transient E\$ and you can then...” “Wooh wooh wooh, slow down there mister! This sounds way to complicated...” Arthur barks back. “I know – it’s a little overwhelming, but bare with me for a minute and put your thinking cap on. This is the whole world we are trying to fix here, and we don’t have enough automation to make this easy yet.” “Ugh, ok. What’s a T\$ again?” “You can use T\$ to purchase Transient E\$.” Jason explains slowly. “Oh...kay...” Arthur follows. Jason continues his explanation, “You can use those Transient E\$ like regular E\$, but they go away once you use them, like the P\$ you used earlier today.” “Argh! Well, what’s the difference then?! Why make it so complicated!”, Arthur replies in frustration. “This system was designed so that people cannot accumulate so much wealth during times of scarcity. Your first Transient E\$ will cost you one T\$. Your second will cost you T\$2. Third, T\$3.

Etc. As you can imagine, it gets more and more expensive to get more and more rich.”, Jason explains. “..Oh...kay...I think I get it....once I spend my transient E\$ then buying more...” “transient E\$ will get cheaper”, Arthur and Jason say together. “Ok, I think I get it now.”, Arthur confirms. So Jayden purchases one T\$ for one E\$ and gives it to Arthur. Jayden’s E\$ converts to V\$, as usual. Arthur then gives the registrar (Jason) his one T\$ for a Transient E\$, or E<sup>T</sup>\$. Jason counts how many total E<sup>T</sup>\$ Arthur has, and he has none so it costs him T\$1 for his first E<sup>T</sup>\$. Jason destroys the T\$ and gives Arthur the new E<sup>T</sup>\$ (printed appropriately with a hash code from his spreadsheet for ownership). With two E\$’s left to spend, Jayden purchases two more T\$ from the registrar and gives it to Arthur. Arthur hands in the T\$2 to purchase his next E<sup>T</sup>\$ (his third would have cost him T\$3, his fourth T\$4, etc). In the end, Arthur now has E\$24 and, E<sup>T</sup>\$2.

Try to imagine this entire process taken to the limit – with supplies in the hundreds, and categories of all kinds. TODO

### 5.3 Game

There’s a card game written that needs to have the rules cleaned up and put here. TODO.

## Part 6 – Relations

This section describes how the Registry would relate to our existing fiat system, and all of our societies related legal and political machinery. Other areas of society that the Registry would change significantly enough are also elaborated on how it would do so.

### 6.1 Corporations

The registry does not prescribe the existence of corporations, only individuals, and does not prescribe how this authentication occurs. Nothing exists to prevent people from organizing like a corporation or an institution; however, the registry does not support it directly. For example, a corporation cannot hold registry currency or perform a transaction, only the individuals can. This does not prevent people from pooling their resources to represent themselves as a corporation, with some extra software or institutions which coordinate this allocation. A corporation could also represent a Project and have funding from Progress, the owner of that Project relating closely to a CEO of that company.

### 6.2 Intellectual Property and Copyright Laws

We have intellectual property laws today to provide an incentive for invention and innovation by making it a means of sustainable living. These laws would still exist likely in the form of contracts with distributors, as the following example shows:

Let us assume a Doctor invents a new way of curing a disease that obsoletes an existing means. The Doctor would literally max out all of their Value and Charge, and possibly request much Transients to a retailer who would distribute this cure, and/or the doctor would become directly involved in its distribution. Like in today's economy, the cost of purchasing this one time piece of information would become recuperated through the sale of each cure, by adding a few extra V\$ to each transaction.

Movies, Games, Technology, Methodologies, Music, File Sharing – all aspects of the law which allow for making a living off of the idea or production of an idea – has similar characteristics in the Registry monetary system, except has much less need on managing piracy due to the incredibly inexpensive costs of the information dissemination. Since the author or inventor represents the only person offering the very first version of an idea, the individuals purchasing such an idea for resale (such as a distributor), would, like in the fiat system, make an investment. But, based on the popularity of the idea, can make a deal with the developer such that, for each distribution of the information (be it music, methodology, book, etc.), the developer gets a cut – similar to a royalty.

From the consumer's point of view, the cost of a such a piece of information becomes cheaper and cheaper as more distributors offer the title or information, and the price becomes so insignificant, that the effort of piracy versus simply paying the cost to the distributor becomes a trivial decision: Simply purchase the information. Perhaps bandwidth would become the only expensive portion, as it seems, based on the level of information sharing, could become a naturally scarce resource.

### **6.3 Shares, Stocks, Ownership**

Value could also have added attributes to them to denote what utility they represent, and the percentage of ownership of that utility. Let us assume someone purchasing an expensive asset, such as a boat or a house. If the individual uses the V\$ received from this purchase as part of the sale of another utility, they would have to transfer some of their ownership over to the purchaser of that utility. You could then state that whomever owns the most V\$ for a particular utility then becomes the owner of that utility. The Registry does not prescribe that ownership relationships of utilities need to exist for Value, just that it could if people wished to do so, and would act similar to other external metrics placed onto the Registry, like Corporations.

### **6.4 Banks**

Having money (borrowing) vs. having a contractual agreement: Some people would prefer the reliability and safety of a steady stream of wealth as opposed to a large lump sum to get access to a scarce resource, today / now. Banks would provide this function by creating contracts involving periodic purchasing of others V\$ during the sale of utilities, delegating that cost to the end consumer. Royalties describe a similar construct. Loans and Interest would not exist as they are not required.

## 6.5 Taxes, Government Budget

Progress relates directly to the spending of taxes a government does to provide common or shared services such as roads, hospitals, and education. The government also spends these taxes on sustaining those who cannot become employed. With a registered economy, no government needs to allocate resources to sustain these people (through enterprises such as welfare), taking away from other areas they could spend tax dollars on. When people have nothing valuable to do with their time, they can exchange their unused Charge with each other, increasing their purchasing power to provide opportunities to those who do have the ability and drive to provide the utilities society desires.

Depending on how the members of the Registry self-organize, I suspect they will require other members to allocate a minimum amount of Progress towards specific Projects in order to utilize their services – for example, you cannot drive a car on city roads (get a license) unless you pay some amount of P\$ towards road maintenance.

Taxes on Goods and Services to provide deterrents (such as drugs or gambling) would instead use Reserves to implement them.

The existing taxes whose purpose serve as a revenue stream from government become obsolete. Value Added Taxes, GST/HST, and Income Tax are all example of taxes that people would no longer need to pay in a registered economy.

The inefficiency caused by Budget allocation would drop dramatically in a Registered economy – this author has seen evidence where if a sector of government does not use all of their budget, they risk losing it in a future fiscal cycle, therefore overspend on utilities that do not adequately suite the function. In a Registry economy, that allocation does not occur from top level government down, it occurs naturally through the Progress distribution algorithm, and through the direct allocation by the members, so claw backs would occur less – sub projects from overarching parent projects would still exhibit this inefficiency, but less so because people can still contribute towards sub projects directly. If the Progresses do not become spent, that must mean there does not exist enough Progress in the Project to compete for a naturally scarce resource yet. However, other Projects did, and they would exhaust their Progress quickly during that competition. Therefore, the Project which lost has a better chance at succeeding in a future ‘fiscal cycle’ if that Progress stays unspent, awaiting that scarce resource (ie: High performing scientist, tradesmen, engineer, etc.) to become available once the work involved in the winning Project becomes complete.

## 6.6 Government

### Democracy and Voting

Progress and Reserves define an implementation for a direct democracy. When individuals feel no longer engaged in what society allocates its time towards, or what it should deem as scarce, they can choose to allocate these currencies to people or groups to make these decisions for them, based on

whatever they feel should sway their decision, like trust, past performance or beauty / charisma. The level of representative vs. direct democracy now becomes the decision of the member.

## **Municipal**

In a Registered economy, the services typically offered from a municipal government would instead have collaborating and competing Projects implement them. Consider several companies offering garbage pickup and recycling services, roadside cleaning, sewage maintenance, etc. If a competing company does not perform, a consumer has the choice to purchase the services of another, creating the efficiency expected of a free market system (relating to R1.1 ), without the artificial scarcity it could create. This could all exist as a cooperating and complex network of supply and demand between Projects, like in the fiat monetary economy.

There would likely exist a central registry for all municipal jurisdictions, and similarly smaller registries for companies and markets within them.

People who live in a municipality would likely have a requirement to become members and contribute some of the Progress towards infrastructure.

## **Provincial/State**

As Projects scale to arbitrary sizes, services typically provided by the Province or State become implemented just like in the Municipal realm, merely larger.

Consider requiring to purchase a license to drive on intercity highways (paid for with E\$ or P\$). Consider pipelines, electricity or mail / shipping delivery services implemented at this level through competing companies trying to provide the best service to their consumers.

## **Federal**

At this point, lines become more blurred. What services at the federal level actually exist? Perhaps cultural boundaries? Defence? But with a high access abundance for all – what would we need such defence for? Abstract cultural items would remain the responsibility of this level, and like at the municipal level, there could exist competing federal Projects.

## **World**

The central registry which all humans register themselves with represents the World registry. The services such as maintaining its infrastructure and persistence of information, trust, and reliability that all sub-registries could rely on reside here. Projects in this registry relate to that of improving all of humanity.

## **6.7 Opinions / Views**

Consider the design to allow Progress to negate Reserves. Because the Registry prescribes no laws and allows their members to do what they will (which increases the Freedom of humanity), it does not

prevent individuals to have views that differ from others. For example: racism and cultural/religious clothing restrictions. The Registry Monetary System does not prevent such views directly, which would allow a Registry to introduce a Survey to make life for those of a particular race, religion or ethnicity more difficult. For example, if you have a particularly coloured skin or follow a specific religion, every transaction you make has some number of Reserves (distributed at the discretion of the Survey owner) allocated toward it. The Registry also allows for people to state that such Opinions / Views should not cause this to happen – those members have the ability to allocate their Progress to negate the Reserves in those projects. So long as more people put in more of their Progress than Reserves available, that opinion would not longer have any measurable effect on society, other than the fact of the existence of people who have those views.

This author has the opinion that using the Registry Monetary System to finally settle the decision on humanities views and opinions shows a much more civilized approach than the alternative of violence and hopes the reader shares this opinion.

## **6.8 Crime, Police, and Fines**

Reserves would act as a tool to deter crime, like a fine, utilized by police forces paid for with Progress. Considering that Reserves destroy non-Transient currency (E\$), this has a significant impact on individuals competing power. If people perform enough bad behaviour (think rapes, pedophiles, mass murders, etc.), they could literally have enough Reserves allocated towards them for enough time to prevent them from 'playing the game' of society, cutting them out from society all together – however, with the abundance created, the incentive for such behaviour should have a significant reduction as there would not exist a need to 'break rules' to survive, along with increased access to quality education and the increase of 'free will'.

## **6.9 Death and Inheritance**

Recall that a there does not exist a means to transfer E\$ or V\$. Upon a members, death, that currency has essentially become lost – unless, for some reason, the individuals state of death was a mistake. There can still exist a Will which, when executed, would allocate any remaining P\$ and R\$ to particular Projects or individuals.

## **6.10 Freedom / Free Will**

What does freedom really mean? This author believes we don't truly have freedom unless we can choose to do nothing or to say 'no' when we feel we need to. We have much more freedom than in oppressive regimes of the past, however, the fiat monetary system still prevents the level of freedom this author envisions. Imagine a world not where management chooses whom to hire, but people who wish to do a job simply ask how they could help with a particular endeavour. If there exists enough demand for the utility under construction, and/or sufficient abundance of other people willing and able to do the same work, then the cost of goods added for introducing another member in a team towards



the production of a utility becomes negligible and the question merely turns into: Does adding an extra body impede or increase production? When someone feels like taking a break when working in a high abundance category of labour, there would always exist someone to take your place. And you wouldn't feel like you lose out by 'quitting your job'.

When the choices made by a member interfere with the utilization of those resources deemed scarce by the *direct* democracy, it may become harder and harder for them to continue that behaviour and still maintain their quality of life. For example, if a Survey exists to deter people from using pollution emitting vehicles, a Progress Project exists to make an abundance of non-emitting vehicles (making their price insignificant), and an individual still chooses to use the polluting vehicle, they may find themselves no longer able to 'play the Registry Game' and utilize the abundant resources it provides as it becomes more expensive to use. However, that simply makes the resource a scarce one, and if the member contributes a sufficient amount to society, perhaps that individual can continue to utilize it. And that becomes the motivator for work: The individual would have to weigh the benefits of not working vs. driving a non-polluting vehicle.

Which opens another conversation about what 'Free Will' actually means. Are we all maximizing agents, in the sense that we decide to do the things which we feel maximize the most of our values? This author believes so, and the decision of what to maximize directly comes from the system used to organize a society.

## 6.11 Gambling, Gaming, and Nothing To Do

When abundance and automation reaches a level where all of humanity can sustain itself on the efforts of very few, people will start volunteering for an opportunity to provide these services. Those who remain need something to do with their time to help decide who should 'get a turn next' with those things which are still naturally scarce (and there will always exist something). The registry, by design, allows people to create an arbitrary number of 'Nothing' or 'null' categories, as described the Real World example above. Consider this example:

Bob, Sue, Jane, and Karl have 24 hours worth of Charge (C\$24) to allocate towards utilities for the day and have a balance of 12 hours in Exchange currency (E\$12) to spend towards utilities. They all have nothing worth doing for the day, so decide to exchange on their null utility.

Bob allocates his C\$24 towards the null utility and posts it for sale on the registry. Sue, Jane, and Karl do the same. The supply of people selling 'null' is 4 people.

Bob is first, and buys Sue's null utility for  $C\$24 / 4 \text{ supply} = E\$6$ . Sues' C\$24 is converted to E\$24. So now, Bob has  $12 - 6 = E\$6$  and Sue has E\$36.

Next is Sue. She buys Bobs nulls utility for  $C\$24 / 3 \text{ supply} = E\$8$ . Bobs C\$24 now becomes E\$24. So now Bob has E\$30 and Sue has E\$28.

Next is Jane. She buys Karl's null utility for  $C\$24 / 2 \text{ supply} = E\$12$ . Karl gets E\$24 from his Charge. So now, Jane has E\$0 and Karl has E\$36.

Finally, Karl. He buys Jane's null utility for  $C\$24 / 1 \text{ supply} = E\$24$ . Jane gets  $E\$24$ . So now, Jane has  $E\$24$  and Karl has what he started with,  $E\$12$ .

As you can see, because Karl was last, he wasn't able to get any benefit of this exchange, so the order was important. However, this demonstrates the simplest method of exchange. There are others, which would evenly distribute the Exchange. The also introduces a measurable means of winning at games, sports or gambling could determine who goes first. Each type of game or category would represent its own supply for a null utility. Imagine a 'null' utility for Soccer. The winning team gets the pot, while entertaining the masses.

## 6.12 Gifts

Purchasing Transients and giving it to another member, or converting their Value or Charge to Exchange describes how one would "give" someone a monetary gift.

Giving someone Progress is like saying "I have no idea what society should spend its time on, could you decide?". Similarly with Reserves: "I don't know what's important to protect in this world. Do you?"

## 6.13 Naturally Scarce Resources

This section describes some obvious, and not so obvious, resources which, through natural law, have more scarcity than things whose scarcity have been created artificially through the fiat monetary system.

### Waiting In Line

Waiting in line represents one of the most naturally scarce resources – waiting for your turn for something that was not expected to have such a high demand. This may happen from time to time, in any society – even a Resource Based Economy. How do we decide who should go first? This represents a great time for people to really start spending their money. In the fiat system, we would say that this is just a money grab, but with the design of the Registry, the person selling the utility which was scarce will not be as significantly better off than if it were not scarce – in fact, they have an incentive to get the supply up enough to reduce their burden and please customers.

Providing a means for people to compete with each other to get ahead of a line (like an app) would increase the usefulness of the currency in the registry.

### Closest

Being closest represents another naturally scarce resource. Like, at the front row of a concert, sporting, or other form of entertaining event. Having the closest parking space, sitting where you want on a bus or train (a window seat) describes other examples. Imagine a scenario where a member could publish their willingness to give up their seat (or turn) that they were able to obtain because of *natural* law – they were there first. Another member has the ability to query the available seats/turns and compete for them with other members. Again, an app could facilitate this exchange.

## Transportation

This currently exists as a naturally scarce resource, and without some significant advancements in technology or infrastructure, will remain this way for a while. Consider traffic lights integrated into a network where, at the touch of a button in your vehicle, you could increase your priority to get a light to turn green when you get there. Or, with ride-sharing services, getting someone to choose you over someone else when leaving a concert when everyone tries to get home at the same time.

## Internet / Bandwidth

Imagine having the ability to say, when you click to watch a movie in ultra high definition, that you can't without taking bandwidth from someone else. At that moment, a naturally scarce resource exists and people would use their E\$ to compete for no buffering and higher definition.

## Music

Once the first song becomes heard and recorded, that should be it – the institution of copyright should not exist. However, live concerts represent something naturally scarce, particularly getting great seats.

## Celebrities

People would use their excess E\$ to having their turn visiting the most popular entertainers.

## Masterpieces

Members would bid on owning, or having a turn displaying, the greatest masterpieces of art.

## Video

In the fiat monetary system, to produce a movie requires a significant investment, and has a lot of risk due to this investment if the video does not gain enough popularity. Also, movies can bring in significant profits which create an unfair culmination of wealth to few. In the registered economy, this risk goes away, and the wealth received by the contributors becomes a function of its popularity and the number of distributors.

## Sports

The best performers define something naturally scarce.

## Scarce Minerals

Physical resources that we only have so many of, or take a lot of energy, time, or effort to produce, describe other naturally scarce resources.

## 6.14 Licensing / Credentials

Requiring the services of individuals who can prove their capabilities becomes a categorization of utility, which would have metrics applied to them like all other utilities. Imagine two separate categories for a

trade: Welding vs. underwater welding. Each requires different a kind of credentials. A member who has their underwater 'ticket' could compete and add metrics to both categories, where a member without could only contribute to one, without lying.

## **6.15 Competing Designs / Form Factors**

In the existing fiat monetary system, competitors for the same utility will introduce new form factors and patent their design (think, cell phones, media formats like Blue Ray) in order to corner the market and beat out competitors. In the Registry Monetary System, there exists more incentive to have multiple providers of the same utility – and if they had different form factors, they would not have enough interoperability and could not categorize themselves equally for the metrics involved. In a Registered society, when you plug your phone in, the jack will fit no matter where you got it from. Technical protocols and designs will have more standardization and openness (think file systems, compression algorithms, virtual machines, drivers, operating systems, etc). Building something proprietary would have no value to a business, unless that new design has some specific advantage such as performance, style, or robustness. Anyone introducing a proprietary protocol for the sole reason of making it different could even get charged R\$ if society would like to deter that behaviour.

## **6.16 Volunteering, Extremely Small Businesses**

People would 'get paid' easier to volunteer. Starting a small business to compete with larger businesses becomes easier because of the metrics of supply.

## **6.17 Donations, Charity and Fund-Raising**

P\$ relates directly to Donations and Charitable foundations, however people can also still choose to use their own E\$, or transfer C\$, for causes they really believe in, which shows more of how much that particular cause means to them. The effort of fund raising to provide for services that are inadequate will not exist. As an example, consider a hot-lunch program at a school to help pay for inadequate funding from a government for institutionalized education that are run by volunteers. Those volunteers (as mentioned above) in a registered economy would just represent people who have a job in offering lunch at the school, if there was an actual demand for it.

## **6.18 Green Economy**

With the Progress and Reserves infrastructure, a Green Economy would not cause such hardship for an economy as it does today.

## **6.19 Unions**

Unions have a major role in negotiating wages for their members with their employers. This has less need in a registered economy. Unions would concentrate more on the useful part they represent, namely improving working conditions. They could receive their funding from P\$ of the members.

Striking would become less likely since unions would have the means to meet their needs more easily through the rules of the monetary system.

## **6.20 Bankruptcy**

The Registry has a continuous flow of currency providing for the good of all its members. If there exist people who create contracts for periodic payment, if they do not pay, then so be it. The people who created the contract will still have the ability to survive, and still quite well. Will they have the ability to get those things which are naturally scarce – no, not as much as someone with a contract that does not fail, which describes the entire point of risk – the one who can play the game best should have more turns for those scarce resources, and if someone takes a large risk that didn't work out, that was their choice. It just as well could have worked out and they would have won. The Registry does not need an extra law to allow for a 'reset' and the process of liquidation and dividend disbursement to creditors. However, it does not prevent it either if society so feels that such a process has value.

## **6.21 Hoarding**

Members of a fiat system typically tend to hoard when prices drop, or if they fear prices will soon rise. There will no longer exist an incentive for this behaviour normally – unless a natural scarcity (such as a foreseen drought) occurs or has become evident. This improves the utility of resources by only building and using what was actually needed.

## **6.22 Classes**

Classes will still exist but will have less span. Someone who relates to what society calls a 'poor' person can only exist if that person chooses to do those things deemed as scarce as per the Survey of the system. There will exist a class of people who either cannot, or do not want to, do much for society. However they may, from time to time, offer what they can when availability presents itself, or when they have the motivation to do so – such as personal crafts, helping in moments of need (weather or disasters), or helping a friend. When not utilizing those exchanges, they will play the null exchange game, as mentioned above, and then become the enablers for those who have the performance and will to produce. The top performers of society who have the desire to perform will encompass an upper class. These people define those who perform well enough to produce those things society needs, and they will do so efficiently to the point where they will satisfy the most people they can. It will also, interestingly, comprise those people who are willing to do the things others do not, such as those jobs which are culturally demeaning or hard to do that haven't yet been automated (think, cleaning toilets, or any dangerous job). These people will have themselves lifted on the shoulders of society, instead of getting paid some of the most menial wages.

The elites will comprise of those who have the ability to produce those things which are naturally scarce, there are few others who can, and they have the will to do so. They will almost never have to wait in line for anything they desire, and the best that society has to offer will be theirs.

Based on this description, the number of those described as poor equates to those who do things society does not want people to do. Those in the upper class describe those who have the intrinsic motivation and skill to perform, compared to the level of automation in society. This class will decrease as the level of automation increases. The size of the elite would be those who actually perform or have the ability to provide those things which are scarce – it should grow smaller as the level of abundance increases. Those who are left comprise the middle class, and those members of the middle class will have an extremely high standard of living compared to the fiat system.

## **6.23 Advertising**

This has less importance, as the supply metrics of the Registrar becomes the natural advertising, and the Projects and Problems represent the things that people care about. Unsolicited advertising may become popular in the form of Surveys, as peoples attention represents another naturally scarce resource. Imagine having the ability to allocate your R\$ to keep advertisements for things you don't care about away from the focus of your day.

## **6.24 Welfare**

Except for Bankruptcy, I can't think of a better example of a 'Hack' on the current fiat system in an attempt to make it work.

## **6.25 Health Care**

With the abundance of access to education and healthy foods, health care providers would become no longer scarce, but still receive the high reputation they retain today. Progress would get used to contribute towards cures to diseases, categorized appropriately. Imagine the ability to contribute your P\$ directly towards a rare disease a loved one has.

## **6.26 Education**

Student / Teacher ratios of 30/1 would be a thing of the past. Imagine 3/1, 2/1. Or ratios of multiple teachers per student, all in a collaborative online community. Assume a statistic of 27% of the world population are aged 0-14, and 66% are working class aged 14-65. Imagine all of the "machinery" of the world was run by only 3% of the working population – that leaves 63% of the workforce available for education. Anyone with the desire to do so will have the ability to get more of a turn for those things which are scarce by providing education to the youth of the world.

## **6.27 War**

With the profit motive significantly reduced by the access abundance the registry would provide, wars would become a thing of the past over resources. Wars that occur over ideals, or if the Registry ever fails, they could still occur. The Registry may not remove enough of the desire to have power over individuals as quickly as it needs to in order for humanity to never experience war again.

## **6.28 Nationalism / Borders**

Borders for Nations would represent actual Registries to delineate resources. For example, capturing metrics on the supply of trees would only include those in the border of the nation. It would also delineate the area where implementations of the use of Reserves would apply, similar to laws. For example, someone can allocate Reserves towards Surveys, but they could only be used to adjust the transactions inside the borders of the nation (when used through its registry, as opposed to some other).

## **6.29 Refugees**

In today's monetary system, infusing a large population into a nation can cause problems in its economy due to having to provide resources for these people or having them displace other workers by taking away jobs that would otherwise have been given to existing members of the nation.

Humanity has the physical ability to accommodate more population, we just do not due to its monetary system. When more people are introduced into the nation, they provide new goods and services on top of the already abundant supply. Unless it introduces more actual scarcity (due to, say, not enough water or land to support them), would this cause any problems in a Registry economy.

## **6.30 Monopoly / Oligopoly**

No incentive to create, but if they exist, would define something naturally scarce and that collection of people who can do that would represent an elite. And it must, and the alternative would not have as much fairness because the people receiving these scarce resources are the best and most desired performers of society.

## **6.31 Raising Children**

People can just leave their job to do this without worry.

## **6.32 Risk**

Taking a risk on a venture becomes much more easier. If a project fails, then it fails, you will not have to go through bankruptcy, welfare or handouts. You may still loose some reputation, however you will not find yourself living on a street begging for food. Assume you accumulate a large amount of V\$ from the purchase of good you spent out of pocket for your endeavour – you will still have them, and can use them instead of purchasing T\$ to catch up quickly with the rest of your peers when charging for the services or products you produce in future endeavours.

## **6.33 Technology Adoption**

Our existing system makes adopting new technologies that would make the incumbent technology obsolete very difficult because the incumbent would resist. A huge investment has to happen in order

to bring the prices down enough to compete, but as mentioned before, once something comes along that makes what you're producing obsolete, you can now concentrate on either that new thing, or do nothing, and you'd still live a fine life in society. You'd likely have a revered social status for contributing to the welfare of the world with your legacy technology.

## **6.34 Retirement**

In the fiat monetary system, you need to save for your future to ensure that you can maintain a decent standard of living during the years when you cannot work. This further exacerbates the loss of freedom of the individual. Some socialist governments attempt to circumvent this limitation through programs like prescribed pensions, each of which become heated political discussions. This describes yet another example of a political correction to a system that does not support people.

In the registry monetary system, similar to how it deals with the equivalent of welfare, people can very happily live without employment – they may not have as much access to scarce resources as someone currently employed, but careful contracts setup during times of employment can make for a better standard of living during your elder years if you chose to organize payments this way. For example, instead of insisting on a large lump sum payment for services rendered, you could instead insist in some sort of 'cut' in every unit sold that utilizes something you've help build or create – which you would provide your unused Charge for and the seller would pass that cost on to the consumer, similar to what we discussed regarding royalties.

## **6.35 Robbery**

This cannot happen as easily due to the annotation of ownership in the currency. If someone attempts to use currency, and the registrar cannot validate the identity of the owner, the transaction will not occur (and can even represent a moment of undesired behaviour, introducing Reserves allocated towards the individual attempting the deception).

Manipulation of the software that creates false transactions could happen, but the solution to this exists in the implementation (see below). Using violence to force people to present their own Exchange to convert your own Charge/Value or to buy Transients for you could still happen.

## **6.36 Coupons / Sales**

Yet another example of problems with the existing fiat system. Coupons represent a means of getting individuals to purchase items at a cost to the seller where the seller hopes to inspire people to purchase their utility over a competitor, and perhaps sway the purchaser to try the product they would not have otherwise without the coupon. The seller hopes they will return for more when they no longer have the coupon and the price yields (more of) a profit.

What a waste of the worlds resources. In the registry system, cost becomes less of a deterrent, making the quality and locality of the utility more important for the decision of which to purchase. When cost



becomes important, the utility already has scarcity so finding individuals to purchase it will not require an incentive like a coupon, by definition.

## **6.37 Globalization**

The inefficiency of moving goods around the world when the means to build them locally exists but we don't because it reduces the cost of goods represents another flaw in the fiat system. With a registered monetary system, those who provide services that can provide for the world registry increases the total supply in a particular locality / registry. Therefore, the cost of producing the utility locally drops, making that ability to produce locally (and therefore efficiently) possible.

## **6.38 “isms”**

As described at the beginning of this paper, The Registry does not prescribe any “-ism”. This section describes how the more popular “-isms” would exist in a Registry economy.

### **Capitalism**

The formal definition of Capitalism defines that there exist private property, ownership and private enterprise. All of these can exist within the Registry monetary system. One can think of profit occurring whenever Charge converts to Exchange beyond the amount of Value owned by an individual, and similarly with Transients, but becomes more difficult to accumulate capital the more an individual acquires. Projects relate very well to private enterprises since Projects have owners, and have the added advantage that they are created through the direct democracy as well as through the market. Therefore, the Project owner would own the capital goods used related to a Project, and has the ultimate choice in deciding how to use it or to delegate that decision, just like in fiat based capitalism.

### **Socialism**

Socialism relates to the idea that property and enterprises are owned collectively. Allowing voting weight tailored to that amount of P\$ allocated towards a Project would encompass this methodology. The Registry essentially solves, once and for all, the Socialist Calculation Debate.

### **Communism**

If the members in a Registered Economy stop using the Registered currency because they start to self organize and there exists sufficient abundance to negate its need, then we could call this a Communist ideology, particularly if prescription of ownership by members start to become obsolete as well. Projects do define owners, however one could think of this as responsibility instead of ownership.

## 6.39 Resource Based Economy / Communist Society / Post Scarcity Society

For those who know the definition of a Resource Based Economy (search “Venus Project”, “Jacques Fresco”, and “Peter Joseph”), you will hopefully see that the Registry can implement the definition of a Resource Based Economy because it does not impose debt or servitude to get access to goods and services – however, it does use a form of money, so perhaps not by its formal definition. You would have to omit the relationship of V\$ to your stake of ownership in the utility for it to have to appropriate definition of common heritage, but the registry does not require it. You can think of the registry as using an individualistic and free market approach of the Economic Calculation problem, as opposed to the computer based decision making system whose factors and parameters are measured and input by technicians<sup>1</sup>. The Registry defines a formal definition for a transition to a post-scarcity society.

## Part 7 – Perspective

The content of this document can feel overwhelming. If taken from the perspective of its use, it may help with its understanding.

### 7.1. Consumer

Assume you wish to purchase something in the Registry. The goal has no difference than in a fiat system. You wish to find the best deal for the least price. Prices for things which are abundant will have such a comparatively low value that simply picking the best / closest / most conveniently available will represent all that deters you, making the choice simple. For things that are scarce – you would want to make sure you can compete with those whom also wish to have access. Bidding wars would occur more often in a registered economy, and this would become more culturally acceptable.

### 7.2. Producer

As a producer of a utility in the Registry, you still have the goal of making the most money for your sales, similar to the fiat system – however the means in doing so has significant differences. There are three fundamental means of earning Exchange:

#### Labour

Like in the fiat system, you need to consider the actual demand for what you offer, and how well you offer it compared to your competitors. If you feel you can compete and have the desire to do this service, post the offering to the registrar. Even if you feel like you cannot compete, it does well to at least offer the service, as this will increase its supply, making it cheaper for your competitors and place your name in the list to possible consumers who could choose you based on things like locality. If there

1 Economic Calculation in a Natural Law / RBE, Peter Joseph, The Zeitgeist Movement, Berlin  
<https://www.youtube.com/watch?v=K9FDIne7M9o>

are little or no competitors, you will want to adjust your prices based on the actual demand, just like the fiat system – think of things which do not have such high demand, like food that only a few people consume.

Let us assume you don't immediately get hired due to the abundance of people offering similar services or the lack of actual demand in your locality. You can also offer other services, with different categories, which in turn increases the supply of that service as well. As soon as you no longer become available to offer a service, you should inform the registrar to reduce the metric of all of your other services – if you do not, someone could request your services while you do not have them available (as you have become busy with another customer), and if you cannot deliver, will harm your reputation and may cost you if a Survey exists in your registry to deter this behaviour.

You can also look at the Projects in your registry and see if the details of those projects require the labour you have the will to offer. This will increase the likelihood of you becoming hired.

## **Entrepreneur**

This essentially represents the labour of coordinating several people to offer their services, and that coordination could get billed directly (in the form of your C\$ and V\$) to the consumers as the cost of goods. Today, Entrepreneurs take risks by investing in the infrastructure to run their business either out of pocket or through loans, and if it fails, bankruptcy laws protect them. In the Registry, getting the capital becomes as easy as starting a project and eliciting the demand from local members. Imagine you want to open a coffee shop in a neighbourhood. You post the project to the local registry. If people want a coffee shop in their neighbourhood, they can contribute directly to your project to get all the initial infrastructure costs in, and you can even use your own P\$. Perhaps people are not engaged enough to allocate directly to “your coffee shop in this neighbourhood”, but you could canvass them, so long as there doesn't exist deterrents for this behaviour in form of R\$ - see Advertising. If not, by tracing to a root problem about “more coffee shops” or even “more food vendors” would get you a slice of the P\$ allocated towards them, if the owner of that project deems that location a viable option. Instead of “more food vendors”, think the corporate name, like “McDonald's”, which translates easily to the existing franchise infrastructure of our existing society. Does McDonald's corporate feel there exists enough demand for a McDonald's in that area to take away from P\$ that would otherwise go to their other franchises?

## **Science, Art**

If you have an idea, publish it and charge for its dissemination. Use existing copyright laws and infrastructure to increase the price of every utility sold that uses that idea. Since you are limited on how much you can charge, this would not increase the price of the actual use of the idea so much that it would deter people from using the idea. The more popular / useful the idea, the more wealth you can accumulate and get your turn for those things which are scarce.

Similarly for art such as music or video. Require each transfer of the music to require a cost, or have a periodic payment for the right to publish your entertainment on a broadcasting medium (radio, internet), that gets billed to the customer directly through member fees.

## Part 8 – Transition

In order to adopt such a system, it needs to start somewhere. And it starts right here, right now, with you, taking the time out of your day to read this document. As of the time of the writing of this document, only rudimentary software has been written for simulation, but in order to do it properly and in the real world, the software has to be, well, awesome (see Part 9 – Implementation) and the author does not have the time for such an endeavour on my own (I still live in the fiat system).

This system needs people who believe in it and who want to make a difference in the world. If you have any skills in the following areas and want to offer help, please contact me:

- Software Development
- Political Science
- Art
- Public Speaking
- Planning
- Project Management
- Motivational Speaking
- Economics

It will only happen if a viral “infection” of values spreads across the globe. People will start using it somewhere, and others will see how well it works and want to join.

## Fiat Integration

This system can integrate with the Fiat system as well. There does not exist anything preventing people from selling their Fiat currency for Exchange, so long as they back it up with Charge and/or Value. There will exist an implicit exchange rate to facilitate this, utilizing the existing banking system to accommodate it. I hope that eventually the popularity of the Registered monetary system will exceed that of the Fiat, and governments will also get involved.

If I were a member of The Registry, and had access to a relatively large sum of Fiat Currency, I would spark an influx of new members by allowing members to buy this Fiat currency with Registered currency. I would start a Project for a registered bank that would serve as a regular bank to hold fiat deposits, however it would never make a fractional reserve loan, since that creates new fiat currency – negating my goal of making fiat currency obsolete. It instead would just offer its holdings on the open Registered market, just like any other member could. Members would purchase fiat currency on the

open market with their Registered currency, made easy through the banks software. If there was insufficient fiat currency to support the members or Projects, fiat currency acts like a scarce resource like any other. Hopefully, the members would realize the value of making fiat currency no longer scarce, and therefore inexpensive on the Registered market and create a Problem for it. I envision this bank Project tracing to this Problem, loaning out the member's currently unused Fiat currency without any fractional reserve. I would use any Reserves allocated to this Survey to deter members from using Fiat currency when Registered currency would have sufficed.

## Problems

The only existing problem I see with the transition into such a system relates to the direct democracy and the state of the education level of humanity. I look at the political race in the United States as of this writing (Trump and Clinton) and shudder. I see the worst of what the fiat system can produce, and it only looks like it gets worse each day. But what we've experienced so far describes the best we can do in a fiat system – and when we want change, we resort to protests, and worse, violence. I only hope that people choose to educate themselves instead of plugging into the latest ridiculous viral video on the internet, or delegate their excess P\$ to a large firm that allocates all P\$ towards advertising as opposed to explaining the real problems and having the collective mind look at all the options. I imagine a Project like “burn all the oil, forget the environment” becoming popular, only because the Project owner chooses to delegate the P\$ towards manipulative techniques, like false advertising and poor science, and there does not exist a high enough population of educated scientists to counter it with their own project. But then again, it would not have become any worse than today's society, so still it comes down to the true nature of humanity. Are humans engaged and good, or selfish and evil?

## Part 9 – Implementation

Software describes the most efficient means of implementing such a system. It can't crash, ever. It has to perform very quickly – if people have to wait, they won't use it. The software and its ledger has to have to ability of validation. Its source must exist on the public domain (open source). One could even introduce Reserves and Progress to motivate discovering bugs or security flaws in the software (rewarded if you find something, punished if utilized). It has to have a distributed design so a single fault cannot bring it down (think Bit Coin), and have a high level of trust in the ledger and software through code signing<sup>2</sup> and a web of trust<sup>3</sup>.

Members can use cash when the technology doesn't merit itself (think, fairs or garage sales). Like in the Real World example (5.2 ), the cash can have encrypted annotations on them so that the registrar can validate their owner once reconciled. The registrar can also invalidate any currency in circulation, making them not usable during reconciliation. This means, if you lose your currency, you won't have to worry about someone else using it.

2 [https://en.wikipedia.org/wiki/Code\\_signing](https://en.wikipedia.org/wiki/Code_signing)

3 [https://en.wikipedia.org/wiki/Web\\_of\\_trust](https://en.wikipedia.org/wiki/Web_of_trust)

## Part 10 – The Author

My name is Patrick Paquette (<mailto:theregistry@pppp.ca>). I live in Ottawa, Canada, employed with Nav Canada as a software and systems developer. I'm just a regular 37-year old guy, with 2 kids, and a wife I'd literally do anything for. I've contemplated dropping everything for this. Quitting my job. Leaving my family. But when I say I'd do anything for my wife and family, I mean anything, including NOT devoting my entire life to something I truly believe can save the world. I need to balance the risk of realizing this system in my lifetime with the world I want my children and family to finish their lives in, and I cannot risk losing them to my devotion to this project in the process – I am too selfish. And I am ok with that. Not to say I haven't worked hard on this. I'm that weird guy who has values quite different from my peers and somehow always finds myself having conversations about this. It has gotten to the point that I realize I have to restrain myself lest I wish to risk losing friends. I've yet to find any of them tell me something I don't already know impedes it's progress – except for what was mentioned in the Transition regarding education and the true nature of humanity.

But in the end, shouldn't all of us do the things that give us the most happiness? We are all self-maximizing actors in this game. I truly believe there does not exist an objectively selfless act, only relatively. I want us all to look around. I want each of us, as individuals, think about what you can do to help this world and I want all barriers that prevent you from doing that removed. And if what you offer has value to at least one person, you should win a little bit more if you choose to do that over keeping it to yourself. That decision factor describes what I read as a gift economy, but it has roots in the culture. How do we transition to such an economy? This system hopes to quantify a gift economy by making the decision to do something for someone easy and worth it, and not a 'selfless act'.

## Part 11 – Conclusion

Now where do we go from here? Contact me if you feel like you'd like to discuss more about what was elaborated in this writing. I fully intend to support any ideas which may help with this implementation. For example:

- Starting up a local registry to test the ideas
- Helping or writing simulation or gaming software
- I've written a couple of card games that help explain the ideas – care to publish it in the Fiat system? Contact me for details.
- Consider joining the [facebook group](#) for more information, questions, videos and collaboration.

I do ask though, that if you intend to share this idea, to contact me if you intend to alter it in anyway and disseminate the idea to others – I've put much mental effort into this design and think I have something to contribute or may have thought of the idea already. If you want to take full credit for this idea and run with it – go for it. I have not written this document for fame or money (obviously), I only want to make the future a better, more fair and sustainable world to live in.

## Change Log

Date	Change Summary
2016-11-11	Inception
2016-12-01	Remove Transient Value, update and footnote for Resource Based Economy, facebook group reference, minor edits, email update
2016-12-16	Abstract, make images more clear on who seller/buyer is, and another review for minor grammar edits
2017-03-11	<p>Added relations: Isms (Capitalism, Communism, Socialism), Insurance and Religion. Updated relations: Resource Based Economy/Communist Society. Taxes and Budgets, Retirement</p> <p>Correct numbering.</p> <p>More on implementation, and transition using a bank that makes no fractional reserve loans.</p> <p>Minor updates to abstract.</p> <p>Update design to have more “emergence”</p> <p>Fix consistency with the use of the term “Survey” vs “Survey Project” vs “Resource Project”. Renamed “Resource” currency to “Reserve” currency. Used the term “reconcile” instead of “back up”</p> <p>No references to ability to transfer Charge – that was an old design that should have been removed.</p> <p>Stop using the word “dollars” to talk about registered currency</p>
2017-04-04	Found another reference to transferring Charge, which was an old design, and cleaned up table of contents/numbering
2017-10-02	<p>Found another reference to transferring Charge...</p> <p>Removed the choice of the members to accumulate Transient. Once members have enough Transient to purchase their next Transient Exchange, the Registry will convert the currency automatically.</p> <p>Defined the distribution of P\$/R\$ from Problems to Projects/Surveys more formally</p>