
Linear Global Governance Model

The following text was submitted to
"The Global Challenges Prize 2017: A New Shape – Remodelling Global Cooperation"
Competition.

For rules and other information about the competition please refer to
<https://globalchallenges.org/en/our-work/the-new-shape-prize>

To contact the author: tomas@svoboda.com

Abstract

Let us imagine a connected world where all people can take part in deciding about issues that affect their lives and their common destiny.

- Where everyone's vote carries weight in small things like local building permits as well as in global issues like a mission to Mars.
- Where all people can vote because they are all equal and at the same time the able and successful ones have a strong voice to make their abilities and power count. And all can take pleasure and pride in making their decisions together as a village or as humankind.
- Where the rich ones try to contribute more to make their vote stronger on common issues.
- Where everyone's vote is accounted for and its influence is recorded in an unambiguous way.
- Where those who have an opinion can vote personally while others may be represented by someone whose wisdom they trust.

This is a world which we would like to propose in the presented Global Governance Model.

SHORT SUMMARY

In designing the model we started with the assumption that the human society is a special instance of a system which to some extent is governed by the laws of cybernetics and theory of systems. Such a systems approach enables us to design things as simple and predictable as possible.

Another assumption was that a common good can be arrived at by combining opinions of many people - by voting. The voting in this model is done via secure telecommunications and provides



to the voters a feedback and assurance that their vote has been counted correctly into the whole.

An important obstacle when designing anything on a global scale is the expected complexity which translates into risks and decreases manageability. An obvious countermeasure is to keep the complexity as low as possible by making things simple and offloading parts to lower levels of organization.

This model proposes a method of Global Governance which enables

- Any person on Earth to exercise their influence on global (and local) issues directly
- Representation if the person does not want to express their will directly and explicitly
- Respect for both the numbers of people and their financial power
- Respect for states as their citizens' default representatives
- Immediate decision in an emergency

GLOBAL AND LOCAL - LINEARITY

DEFINITION:

Let us begin by clarifying one word: LINEAR

In these writings we understand this concept as “directly proportional” - as a situation where the output of a process or a system matches its input in the most exact or proportional way.

Throughout the proposed model we try to apply the principle of Linearity which means that things should behave similarly in various contexts - a.o. in local and global governance. E.g. it should work in a very similar way whether a person is voting about a local decision or about something as global as a mission to Mars. Thus we try to show that local and global governance can work on the same principles and coexist fruitfully with each other.

REQUIRED CONTENT

INSTITUTIONS

The roles of the following proposed Institutions are elaborated further in the “Description” document.

Global Council

We propose the formation of a Global Council which is a virtual body of all voters around the globe who can vote on all common issues and have a certainty that their vote has been

correctly counted. The votes are weighted according to two criteria - number of people and amount of money contributed. For a “yes” vote there must be a **majority** in both criteria. A physical representation of the Council is a gathering of the most influential (“weighted”) representatives of voters in one place.

Presidium of the Global Council

Is elected by the Global Council and serves to organize discussions and voting. Presidium consists of 7 members elected in a specialized continual vote. Members of the Presidium have special rights to elevate proposals to a Voting status.

President

President is the Presidium Member who has received the most votes when the Presidency was vacant for reelection. The President represents the Global Council and has special rights to elevate proposals to a Voting status.

Court of Procedure

Guards whether the voting of the Global Council has adhered to applicable rules and procedures. This is a key component which decides whether a voted Decision is compatible with applicable rules or whether for some reason it is invalid.

The court must be designed in a very conservative manner to provide needed stability and extreme responsibility of decisions.

Global Identity Management System

An institution built around a technological system for managing a trustworthy list of voters around the globe.

Global Transaction Verification System

An institution guaranteeing the correct counting of votes.

REGULATIONS

The regulations ruling the presented model are described to more detail in the “Description” document, “Rules” section. The regulations must be simple in order to allow straightforward interpretation and maximum clarity.

DECISION-MAKING PATHS

A Standard Voted Decision



A decision starts as a Motion submitted by anyone. It is prioritized in a queue in a continual vote by all the voters. If the Motion has been prioritized to the top of the queue it is elevated to be voted. The vote then decides whether the Motion is rejected or approved. If approved by the vote the Motion becomes a Decision.

Other decision paths e.g. a Continual Vote follow a similar philosophy

CONTROL MECHANISMS

Court of Procedure

Its role is to stop a Motion or Decision if it

- was arrived at by incorrect procedure
- contains internal contradiction (a.k.a. Does not make sense)
- is impossible to execute

HOW KEY INDIVIDUALS AND OTHER DECISION-MAKING BODIES ARE TO BE APPOINTED

Presidium of the Global Council and the President

These individuals are appointed by continuous election of the Global Council.

Court of Procedure

Senior judges are nominated by the Presidium and approved by Global Council for a long stable period.

Global Identity Management & other executives

are nominated by the Presidium and approved by Global Council

Illustrations

Fig. 1 Voting Paths

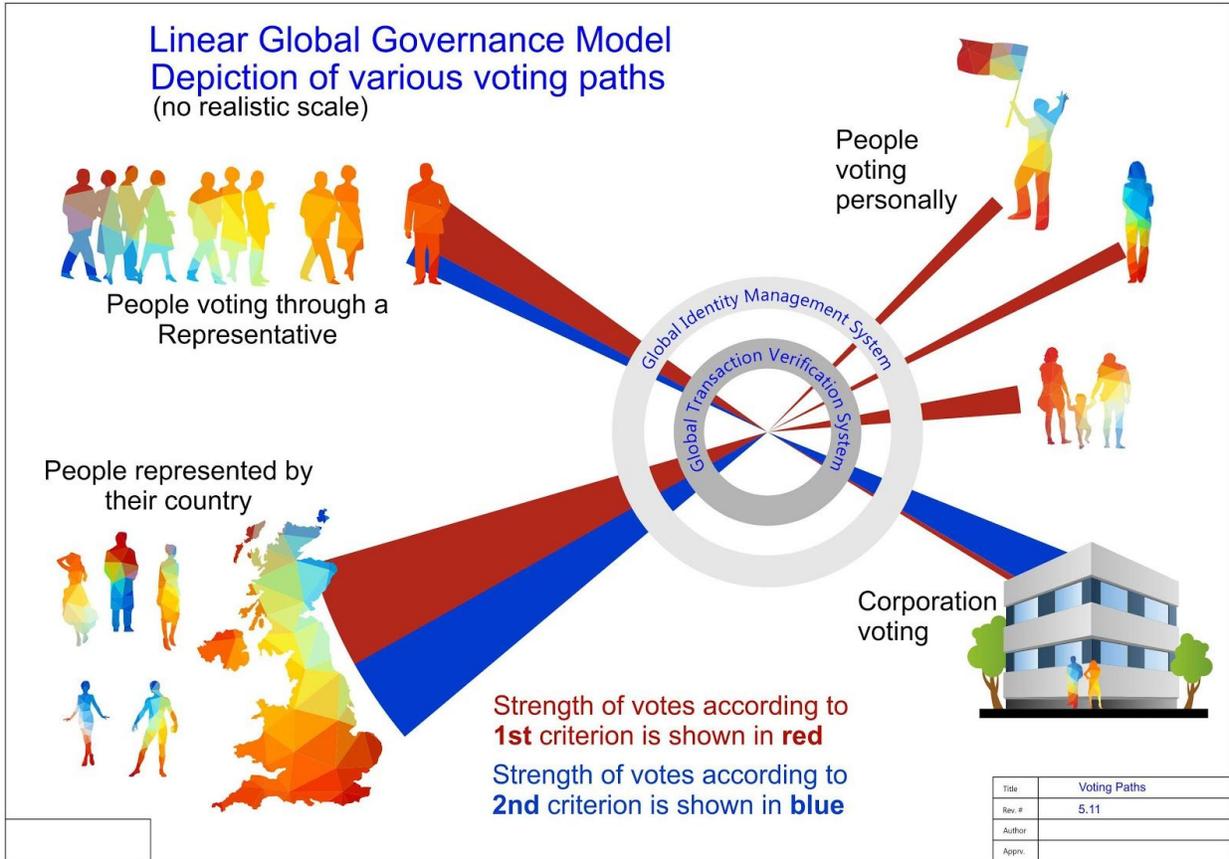
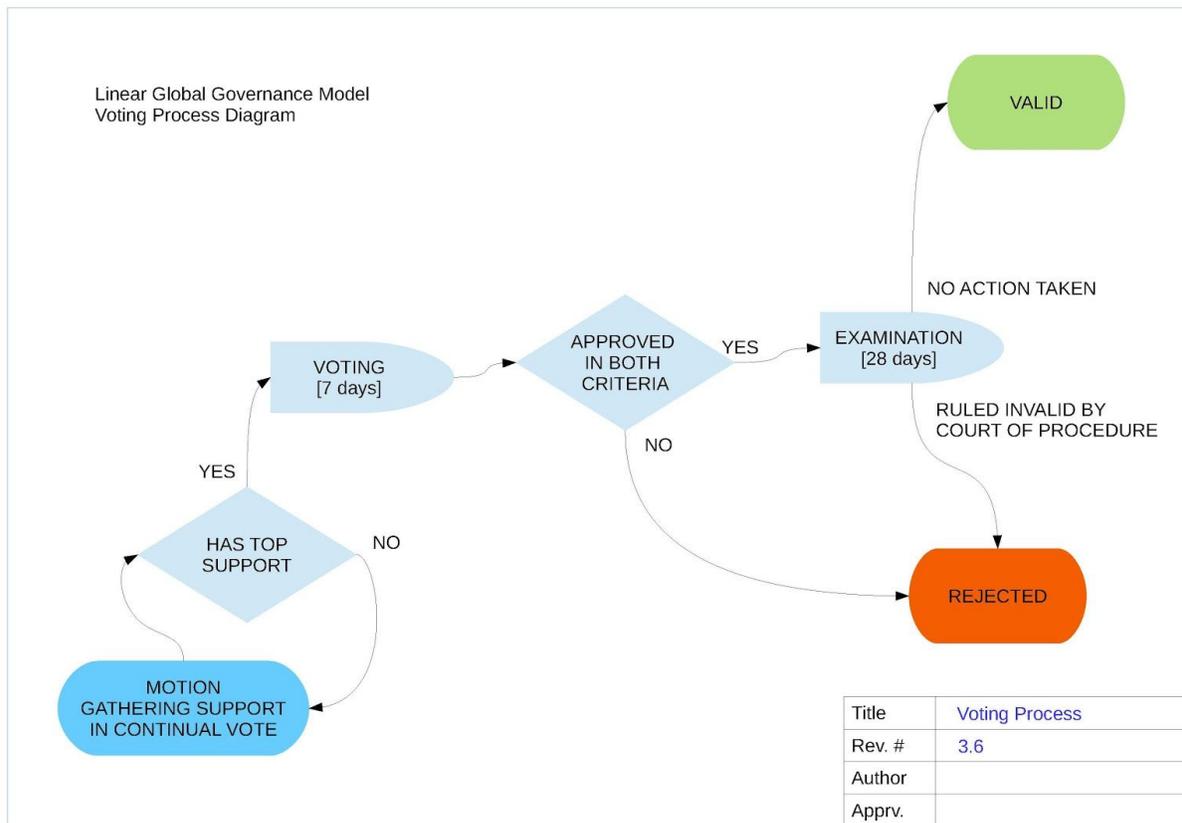


Fig. 2 Voting Process



Description of the Model

SCOPE

The task has been to design a governance model and describe it in a short text. This means that we can present a brief description, not detailed elaboration of the concept. We expect to elaborate the topic more deeply in a book as soon as the requirement for anonymity (defined in the rules of the Challenge) expires.

It should also be kept in mind that a governance model is only a part of a successful project. Beyond our scope remain many factors like justice, distribution of wealth, morality, management of information and truth, education etc. The presented Linear Global Governance Model is just one possible part of an overall solution.

LEGEND

Underlined text or numbers are arbitrary parameters that are likely to change due to later analyses

The text is structured by titles of 3 levels as follows:

TITLE LEVEL 1

TITLE LEVEL 2

Title Level 3

PRINCIPLES

In this section we would like to start by showing a bigger picture of the important underlying powers and dependencies that influence global decision making processes and how we would employ them in a proposed Global Governance model.

COMPLEXITY

It can be argued successfully that the expected complexity of global projects is beyond reasonable possibility and would lead to risks of extreme vulnerability and chaos. On the other hand there clearly do exist global challenges which can be addressed only on a global scale.

How can we design against the menace of overwhelming complexity?

- By keeping the rules and principles simple, straightforward and unambiguous
- By offloading complexity onto lower levels of the system e.g. localities and specialities.
(Consistent with the established principle of Subsidiarity - ref 5)

This design incorporates all the above opportunities to reduce the system complexity and thus mitigate the associated risks.

WHAT ARE THE POWERS THAT RULE (OR SHOULD RULE) THIS WORLD

In this sub-section we would like to identify the basic forces that have power to influence global decisions. This is in order to recognize those powers and try to work with them.

Power 1: People

It has been an axiom in most democracies that all people are equal and therefore must have the same decision-making influence. That is a solid principle which should be upheld. Every human being is something real and well defined – which gives a solid base for construction of predictable decision-making systems.

It used to be impossible to interact in real time with millions of decisionmakers so their power was exercised through representation and imperfect voting systems. This limitation is no longer valid – thanks to advances in computing power we now are able to interact with billions of people and keep account of their inputs in real time and in failsafe accountable manner.

Power 2: Money

We have long surpassed the Pareto principle (ref. 3 and 4) of 80/20 where 20% people should hold 80% of resources. Now we are somewhere around or above 95/5 which (efficiency and justice aside) means that there is huge - maybe absolute - power in the hands of corporations and individuals.

It is often argued that money (especially in its current virtual forms) is a fictive concept. However for the purpose of these thoughts we would like to speak of „money“ as something reasonably real that represents a measure of people’s (and organisations’) effort or contribution to a common goal. In this sense “money” is another real power that makes the difference between success and failure.

It seems natural to assume that whoever contributes more „money“ to an effort should also have a proportional influence on decisions about that effort. Unlike in current tax systems (simplification) where most money is taken from the successful while the usage is for all uniformly.

The contributions counted toward voting weight can be voluntary contributions at the beginning and possibly could later morph into some form of global tax system - the proposed and idealised “Carbon tax” is an excellent opportunity.

To put this into current context let us recall Ref.(2) - president Trump's speech at the U.N. where he complained about the U.S. paying most of the United Nations' expenses while exercising very little influence. The present Linear Governance model would be a step toward repairing that discrepancy.

Power 3 etc.

One could identify further important global powers however to keep the complexities low we will rather limit our thoughts to the 2 preceding powers.

This would specifically apply to "political power" - an unmeasurable mixture of past credit, military capability and institutional relationships - on which the United Nations were based. If it cannot be measured it cannot be later used to adjust the system and this is what keeps the U.N. anchored to the past and unable to shape the future.

Decision-making based on real powers

When decisions are based on real powers and influences they tend to survive in the real world. Whenever decisions are based on superficial rules or fictive concepts they tend to be overrun by real powers and bypassed by any mechanism available.

To illustrate this notion let us imagine the crossing of a wide long distance road and a small country road. It is natural and "real" for the traffic on the large road to have priority. Should we set up a traffic sign giving priority to the small road we would probably see accidents caused by difference between the usual perception of reality and the "unreal" traffic signs.

Current situation is such that political decisions are based on people while important economic decisions are made by the anonymous power of money. However money is so powerful that it exerts its influence into politics as well – which is considered wrong, corrupt etc.

In a balanced decision making (a.k.a. some sort of voting) a decision must be weighed by both the people (every human has the same weight) and by money/contribution. This would be similar to a parliament where one chamber is elected one-person-one-vote while the votes for the second chamber are commensurate to tax contributions from individual voters.

GOOD DECISION-MAKING PATHS ARE LINEAR

Linearity

In this section we will try to explain that in order to create a smoothly running system it is often advantageous if information in that system travels in a linear fashion meaning that it is transmitted through the structure of the system without unnecessary modification.

Our main point is that throughout history many non-linear transformations had to be introduced into public decision-making systems to compensate for the current inability to process all necessary information in real time. However nowadays it is realistic to process all imaginable quantities of information in short time therefore allowing for example all the people on Earth to vote on an issue within minutes.

Moreover: Throughout history it took a long time and indirect interpretation for decisions from the top to reach people at the bottom. Nowadays news travels very fast and all people get swift feedback about decisions that affect their lives. This increases their frustration about their

inability to influence those decisions. Having information travel directly in both directions opens the potential for an entirely new participatory way of governance.

What is linearity

We borrow the term from Systems Theory which is very relevant to systems of governance in human society. Though many aspects of human society are not measurable we try to create abstractions using measurable values thus increasing our understanding and command over these.

In theory a function is considered linear if its output is directly proportional to its input. Like pressing the gas pedal in a car results in (approximately) linear or proportional speed of movement of the car. However when we reach some speed we cannot go much faster - this is one example of non-linearity. Another example of non-linear behavior is when we run out of gas or the car crashes and suddenly the movement of the car is not proportional to our stepping on the pedal.

It is clear that while in linear mode (the medium range of speed) the car is easily controllable and predictable. It just works fine. However when the car gets out of the linear mode we may find it difficult or impossible to control its movement and destiny.

It is the same way with many other systems in both technology and society. Linear systems are easy to predict and control while non-linear systems tend to give us a hard time. It is important to realize that our society, local and global is a very very non-linear system of systems. Making the decision-making processes in the society more linear is one way toward regaining some more control of our common destiny - and taking that control away from those who try to abuse the many discrepancies in our existing governance models.

Linearity in time

A system linear in time would be one that does not change its behavior. Meaning that it reacts to your input in the same way / producing the same output regardless of when you apply the input. This can be compared to an overnight vending machine - whenever you insert a payment you receive a soft drink or whatever. That is behavior linear in time. However in a brick store which closes at night the behavior is strongly non-linear - its output is zero all night.

In current election systems there is a sharp temporal non-linearity: One day your opinion matters and the next day it does not for the next four or five years. This contributes greatly to perceived contrasts between behavior in election campaigns and after election.

We would like to see a system of governance that is linear in time - meaning that whenever I - the voter - express my small opinion it will always have the same impact. This is the ideal but there are many necessary non-linearities. For example there has to be some moment when a decision (e.g. to start building a bridge) is final and partial opinions do not matter any more. However there are cases where time-linear behavior is possible and beneficial (e.g. TBD)

Linearity in decision-making and weight of opinion

A linear system in terms of weight of opinions would be unchanged while the opinions (a.k.a. Votes, information) is processed by the system. Unlike in current parliamentary systems where the weight of individual votes is changed greatly due to various counting models - in the extreme case the opinion of a minority is ignored if it is smaller than the "Election threshold" of 5% or

similar. In a linear system each voter should have a guarantee that their small vote is included in the final counting even if it is just one billionth of the total. It is not just to give everyone a fair chance but even more to prevent various discrepancies (a.k.a. non-linearities) associated with artificial limits and boundaries inserted into the process.

Delegation

After being elected to office a person is made relatively independent on the opinions of the electorate. There is some remaining dependence through parliamentary negotiations, impeachment etc. which is highly nonlinear and is activated only under some conditions. This independence leads to a difference between actions of the elect and their previous promises.

In a linear model the voter would be free to rethink their election at any time so the elected person would be in a constant need of keeping their voters satisfied (However there is a thin line between this direct influence and populism which should not be crossed.)

Necessary non-linearities

Just like our ancestors were forced to include some non-linear components in their democratic processes we also see such a need though on a smaller scale. Some of the important cases are:

- Dampening
An efficient decision-making system has to include some inertia so that it does not react too hastily or impetuously to its inputs. Too quick a reaction can lead to instability of a system which itself leads away from linear behavior. Therefore “dampers” need to be included in the system that would absorb or slow down some effects of quickly changing external inputs.
- Protection of minorities versus majorities/monopolies
In a linear system one influence can attain more power than others and effectively take over. It is wise to include measures against such possible behavior.

DESIGN OF A GLOBAL GOVERNANCE SYSTEM

DESIGN GOALS

These are the basic starting points from which we launch our design of the Governance Model

- Every person should be able to exercise a measurable bit of influence on the whole.
- Every person’s input should be carried through the governance system in a way as direct as possible similar to a direct proportionality.
- Not every person has the will or capacity to worry about every decision. There delegation or representation comes in which also serves for entrusting the decisions to someone plausible. These trustworthy representatives bring into the system their wisdom and ability to interpret and reframe the questions and issues.

- Technology can make our processes very fast but human beings need some time to think before making decisions.
- Some people and organizations are more powerful than others and the most usual measure of that power is finance. There is no use denying that power, rather it makes sense to acknowledge it and cooperate with it.
- Various juridical persons like states and corporations do exist and are important. They represent and serve people in various ways. Though they should not be granted any rights reserved for humans they should be included in the governance of common things.
- People are moved not by thoughts and concepts but by symbols, stories and personalities. Therefore apart from building a perfectly just voting machine there also is a need for symbols that one can identify with.

DESIGN DECISIONS

A single voting process evaluated by 2 criteria:

- One vote per physical person
- One vote per dollar contributed

In order for the vote to pass there has to be at least **50%** consensus in both criteria. In other words a vote has to be agreed on by the majority of people and majority of contributors simultaneously.

Voters are both physical persons and juridical persons while only physical persons are entitled in the First Criterion / one vote per physical person. Juridical persons are entitled to voting power according to the Second Criterion - proportional to their contributions.

Any voter can vote personally or be represented by someone they trust. To be represented the voter gives their trust to a "Representative" meaning that the Representative is entitled and expected to vote on behalf of the voter in all votes. Changing Representatives should be freely allowed but not too frequently. When the voter has entrusted their voting power to a Representative they should still be able to vote personally on specific votes of their choosing.

By default (meaning until a different decision is made) every voter is represented by their country government in order to bring the countries into the process.

Extremely powerful Representatives should be limited in their voting power to prevent monopolization of the voting process (We do realize that this is a mortal sin against the principle of linearity - however we see it as a measure against a total un-linearity which would be the monopolization of the voting process.)

Electronic Voting

Voting electronically via secure telecommunications is the only realistic way of participatory global decision making. The electronic methods of voting, vote evaluation and accountability are being tested and used regularly. They are not without risks and many bad guys are eager to

exploit any weakness found. Therefore the methods used must be carefully scrutinized on a continual basis (as in Reference (1)) in order to maintain a lead before the potential abusers.

COMPONENTS

INSTITUTIONS

The proposed Institutions have been listed and described in the Abstract as required.

These are the Global Council, Global Presidium, Global President, Court of Procedure and the following Systems:

IDENTITY MANAGEMENT SYSTEM

The purpose of an Identity Management System (IMS) behind the governance model is to ascertain the identity of every individual - physical or juridical person - interacting with the Governance System. The well thought-through design of this component will decide much of the whole system's resilience to various forms of potential fraud.

The function of IMS is to accept inputs from various sources formal and informal about individual identities and combine them into one worldwide list. The sources include formal and definitive ones like national registries and less official ones like bank information or social media.

IMS (through machine protocols) will provide conclusive answers to the following standard questions:

- Is the person trying to access a system the one they are claiming to be?
 - If information provided by the accessing person is inadequate (e.g. a lost password) can we reach a certainty about their identity and act on it?
- Who is the person trying to enlist in the system - based on their national and other credentials?
- What voting weights are associated with a person?

While the technology behind the system is ready and proven the methodologies of evaluating numerous identity sources will be a challenging series of tasks requiring a large dedicated workforce.

Collateral Benefits of IMS

A Global IMS when created will be a unique tool for numerous commercial, governmental and societal application. For example it might well help social media in eliminating false persons sourcing fake news. As such the IMS may even pay for itself through commercial usage.

The IMS must be designed in accordance with the strictest rules on protection of personal data like the European GDPR.

TRANSACTION VERIFICATION SYSTEM

(TVS) In data processing systems a “Transaction” is anything that changes the input or output or internal state of a system. In our design a Transaction is the act of voting by a person. To make the system extremely trustworthy it must provide to every voter an unmodifiable record of how they voted and how their vote had contributed to the whole voting decision. This is not uncharted territory. We can take much inspiration from currently popular distributed cryptographic systems like the Blockchain that runs behind the famous digital currencies e.g. BitCoin. While the BlockChain itself we do not anticipate to be scalable to a global level some of its principles can be used. Actually the BlockChain is limited by its principle to include no single central node. Our task is simpler: We can afford to have a central node (or multiple cooperating nodes) for transactions as long as their outputs are distributed and archived in unmodifiable and trustworthy manner. This enables us a qualified assessment that the global system is feasible using current proven technologies.

The function of the “Transaction Verification System” (TVS) is to provide anyone with an answer to the question:

- How has the voter (with anonymized ID) X voted on issue Y and
 - how has their vote contributed to the whole?

If each voter (knowing their anonymized ID) checks their past votes ex post then a certainty is achieved that all the votes were summarized correctly. The ex post checking does not have to rely on users’ individual diligence - it can well be handled automatically by a multitude of third party programs that work with the voting system through machine protocols and make the process comfortable for the user.

DIVERSITY OF TOOLS

Some of the complexity of designing and running a huge global voting systems can be offloaded onto multiple subsystems (e.g. software components like user interface programs - probably created by independent parties) adhering to the same core principles but realizing them in various creative ways corresponding to different views and user priorities. Healthy diversity is one way to overcome the risks of excessive centralization.

It is beyond the scope of this paper to elaborate to much detail but it is safe to say that diversity of tools is one hopeful path to explore.

SECURITY

When using electronic communications and data processing security is of paramount importance. It will be a crucial factor in the implementation. When speaking of security one must be specific about the risks to be secure from. Some of them are

- Fraudulent or erroneous counting of votes
- Loss or theft of personal data

A system of global magnitude will be extremely attractive for misuse. It is often considered nearly impossible to achieve an excellent level of security in large systems. However an excellent level of security and trustworthiness is a necessary precondition, even more important than functionality itself.

While precise elaboration of security measures is beyond the scope of this document some of the measures would include:

- Testing the software and methodologies first in small scale e.g. in local communities
- Dividing the global system into parts using different technological solutions to achieve the same goals so that no single weakness would be common for the whole system
- Multiply redundant computing where the same task is achieved by several different methods and their results are compared for equivalence
- Using technological components already developed for very demanding applications e.g. banking or military
- ... etc.

RULES

The following text is a quasi-legal expression of how the governance model should work. It tends to be unambiguous like a definition or a regulation but human-readable simultaneously.

Apart from the following technical rules there must be top-level “Constitutional” rules defining the fundamentals beginning with Human Rights. To change these top rules a higher level of consensus is required than for ordinary decisions. This is however beyond the scope of this document to elaborate.

VOTERS

Voter is a natural or juridical person from anywhere on Earth whose identity is known and registered. To every voter two values are assigned:

- First Criterion value which equals 1 for every natural person and 0 for a juridical person
- Second Criterion value which equals 1 for every dollar contributed by the voter in the past year to common causes.

REPRESENTATION

A Voter may delegate their voting rights to another voter - a Representative. The Representative must not reward the voter for the delegation. The delegation is valid unless the voter chooses to vote explicitly on a particular Motion.

A State (a juridical person by definition) is by default the Representative of all its citizens under the condition that the citizens are

- free to select other Representative or vote independently and
- receive education and means to enable them to execute their individual voting rights in a qualified mode

First Criterion

The weights of the highest 9 representatives are reduced to the value of the 10th voter in order to prevent any one or group of voters from attaining an overwhelming power.

Second Criterion

The weights of the highest 39 voters are reduced to the value of the 40th voter in order to prevent any one or group of voters from attaining an overwhelming power.

MOTIONS

A Motion may be introduced by anyone (any Recognized Identity) into a Global Queue. A Continual Voting determines the priority in the queue.

The most prioritized Motions are regularly elevated for voting.

The Global President and members of Global Presidium have additional rights to elevate Motions for voting.

VOTING

Voting Phase starts when a Motion is elevated to a voting status and ends **one week** later unless special provisions are used to shorten the period.

Voting is executed via secure telecommunications. A voter specifies whether they approve the Motion by an answer of Yes or No. The vote is secret.

A voter may change their vote and/or their Representative at any time during the voting period. The decisive value is the one valid at the end of the voting period.

Every voter (including Representatives) before voting on a Motion must prove that they are human and that they understand the question along with its consequences. This is realized in a brief test. The test must not give preference to any particular voting variant.

Votes are summarized in a way which provides

For all

- Total sum of Yes and No votes and their sum weighted according to First and Second criterion
- Auxiliary information enabling verification of the voting down to the level of each individual vote while respecting the voters' privacy

For each individual voter

- Chain of representations leading from the individual voter to the voting mechanism
- Their resulting vote as it resulted in the chain of representations

The total sum is calculated continually during the Voting Phase and is publicly available.

During the Voting Phase discussions are organized in both physical and virtual space. Active participation is prioritized according to the voting power represented by the participant.

DECISIONS

A Decision is made based on a Motion which has received more than **50%** of executed votes in the First Criterion (one vote per person) and simultaneously more than **50%** of executed votes in the Second Criterion (one vote per dollar contributed).

After the vote a Decision enters an Examination Phase of 4 weeks duration in which it may be annulled by

- Vote of 60% or more in the First or Second Criterion at any time during the Examination Period
- Ruling of the Court of Procedure at any time during the Examination Period

The Examination Phase may be shortened using special provisions to facilitate emergency decisions.

CONTINUAL VOTING

Continual voting serves to provide an uninterrupted timely answer to constant questions, namely

- Election of individuals to certain roles
- Prioritization of Motions for voting
- Budget allocations

The voters may apply their votes or change them at any time even when currently the vote has no immediate effect.

Continual Voting to Elect Presidium

A voter answers the question “Whom do I want to be a member of Presidium?” The voter can divide the weight of their vote among any number of candidates.

Every Presidium Member including the President has their seat guaranteed for 1 year from the moment of election. The president additionally remains Presidium Member for 1 year after the end of their presidency. A seat becomes free for a reelection after a Presidium Member no longer has their seat guaranteed.

If no seat is currently vacant then the Continual Election has no immediate effect - it provides only an informational feedback. Once a seat is free for reelection the continual vote comes into effect to fill that seat.

SCALABILITY AND RECURSION

SCALABILITY

Based on technological and organizational estimates the presented Governance Model can scale up to at least 100 billion participants (in U.S. English).

In the downward direction the model can scale down to approximately 100 participants so it can be used even in very small public subspaces.

RECURSION

Recursion in computer science means that inside some object another object of similar properties can exist. The trick is that both the inner and outer object behave similarly and can be worked with in similar ways.



A real-world example could be a branch on a tree. There is a big branch from which grows a smaller branch. On any of these one could perform the same operations e.g. cut off, shorten, paint, disinfect, etc.

Inside a system of governance (like the global one we are imagining) there can be another (recursive) one governed in the same or similar way. Inside the Global Council there can be an American or Asian (etc.) council operating on the same principles and sharing some of its members/voters.

DEPARTMENTAL RECURSION

A Global Governance system will naturally deal not only with general issues but also with specialized ones. For example we may see a global discussion whether to prioritize a mission to Mars or a lunar base. Only a minority of humankind will have something to say about it. For that globe-spanning minority however this may be an important, almost existential, question. For such specialized decisions it would be natural to sub-organize the Global Governance model into multiple specialized “councils”. It would seem natural to somehow enforce the separation of voters across these groups e.g. by allowing each voter to vote only in one specialty group or similarly. It is however beyond the scope of this paper to elaborate to much detail.

IMPLEMENTATION IN REAL WORLD AND REAL TIME

One thing is imagining and designing a wonderful concept or a system. Another very different thing is implementing it successfully.

It is inevitable that plenty of talented bad guys will invest great effort into abusing any weaknesses or flaws in the system. Therefore it would make sense to develop, test and implement gradually, from small scale to large, so that errors can be treated along the way.

WHAT CAN BE DONE RIGHT NOW - DEVELOP THE INFRASTRUCTURE

It is clear that the presented Governance Model will need to be supported by special software along with its implementation methodologies. These components can be developed in advance before any critical global decisions are made and can even go a long way toward proving their worth.

One thing is developing the software with global scalability in mind and another thing is implementing that software as core of a global governance system. Both are difficult tasks but the first one can be done in advance in a safe environment though not without expenses.

TESTING IN LIMITED SCALE

We are speaking about an effort of global scale with considerable technological and methodological challenges. Generally it is a good idea to grow such a system continuously from a small scale to large while solving various scale-related problems along the way.

A good way of such growth-testing could be in some medium-sized international organizations.

WHAT CAN BE DONE SOON - Engage in non-conflicting activities

In the beginning the Global Governance needs to establish its authority and deploy its structures. Before getting real political power it can start with global activities that produce the least conflict against the established status-quo. These may include:

- Humanitarian efforts including disaster relief,
- Ecology including climate change,
- Technical standardization,
- Education and culture,
- Science and exploration including space exploration

Later the efforts will likely include issues with more importance and less of consensus across humankind like peacekeeping.

Role of the existing states

The current (mostly national) states do exist and have to be respected. They can very well be used in their primary function of ascertaining the identity of their citizens for the purpose of authentication. (For example we would likely trust even an ID card from North Korea in lack of any better identification.)

In the next step the existing national states will be pulled in to represent their citizens in voting and to contribute funds.

FINANCE AND RESOURCES

In the beginning resources will be necessary for preparing the building blocks and preparing the public acceptance of the new model. In that phase donations from private persons will suffice. Later when bigger tasks are started it will be necessary to receive contributions mainly from the beneficiaries of those tasks , especially from states.

IMPLEMENTATION ROADMAP

- Develop the concept into a more detailed strategy
- Plan and develop software and methodologies
- Test the system in smaller contexts
- Find and construct political opportunities for implementing the governance model in partial situations
- Plan and find worldwide support for forming a new global governance body e.g. by replacing the current U.N. model
- Build and operate

Argumentation demonstrating how the model meets the assessment criteria

1. CORE VALUES

REQUIREMENT

Decisions within the governance model must be guided by the good of all humankind and by respect for the equal value of all human beings.

ANSWER

It is presumed that a collective decision of a maximum number of informed persons will lead to decisions good for all humankind.

All human beings are of equal value. This is built into the proposed model through the First Criterion where decisions are done by a majority of votes corresponding to a single person each.

However when reaching for practical achievements one must take into account the measure of abilities and contribution of various individual persons and groups. That is where the Second Criterion comes in which does not contradict the First one and does not have the power to overrule the First.

2. DECISION-MAKING CAPACITY

REQUIREMENT

Decision-making within the governance model must generally be possible without crippling delays that prevent the challenges from being adequately addressed (e.g. due to parties exercising powers of veto).

ANSWER

The Linear Governance model is in principle the most direct route from the opinion of any individual to a common global decision.

Most non-linearities like the aforementioned powers of veto are avoided. The only power that can unilaterally stop a decision is the Court of Procedure if it finds a violation of core principles. Some artificial delays however have to be inserted into the process in order to give everyone sufficient time to develop qualified opinions regarding the issues being voted.

The model does away with many existing distortions in the path of decision from the individual to the top. Among these distortions is the arbitrary model of vote-per-state and powers of veto for some states which tend to paralyze realistic decision making. These distortions we call unlinearities and try to design a very linear model.

Given this most straightforward trajectory from a person to a global decision it is safe to say that the Decision-Making Capacity is there in excellent form.

3. EFFECTIVENESS

REQUIREMENT

The governance model must be capable of handling the global challenges and risks and include means to ensure implementation of decisions.

ANSWER

Effectiveness is a very broad concept. In a simplified understanding it entails the ability to make a decision and act on that decision in order to achieve the desired effect.

The first part - the Decision-Making Capacity has been discussed in the previous section while the capability to act will depend a.o. on resources available which are dealt with in the following section.

Both parts are well capable of executing their tasks and therefore the required Effectiveness is present.

Another aspect of effectiveness is also the ability to make and execute decisions quickly in an emergency. This is provided under the condition that a broader consensus exists than for a simple vote.



The presented model has been designed with effectiveness in mind.

4. Resources and Financing

REQUIREMENT

The governance model must have sufficient human and material resources at its disposal, and these resources must be financed in an equitable manner.

ANSWER

We count on receiving donations first from private persons and later from states as the system makes progress toward solving problems the donors are interested in.

The Second Criterion counts on having the decision-making power dependent on the size of contribution of a member state or a group. Therefore the member states will be motivated to pay for their influencing power and therefore contribute more. Hopefully this might even lead to a voluntary escalation of contributions which would provide enough human and material resources.

5. TRUST AND INSIGHT

REQUIREMENT

The trust enjoyed by a successful governance model and its institutions relies on transparency and considerable insight into power structures and decision-making.

ANSWER

The presented model offers the best possible trust-inspiring insight into the decision-making process. To build trust through openness and transparency we propose that every vote of every



person on Earth to be recorded and made publicly available in anonymized form (under anonymized ID). This means that it is not published who the real person is behind the vote. However each and every person does know their anonymized ID and can therefore check the validity and correct processing and execution of their votes. The people would be encouraged to do such checking via their computer programs which will result in a high level of trust in the system.

6. FLEXIBILITY

REQUIREMENT

In order to be able to fulfil its objectives effectively, a successful governance model must contain mechanisms that allow for revisions and improvements to be made to its structure and components.

ANSWER

Flexibility is provided by many self-regulating mechanisms in the proposed model. To begin with there is continual self-adjustment to changing numbers of voters and their contributions.

As for changing the rules themselves: As with most constitutional systems there are provisions to change even the basic rules of the system though requiring a high level of consensus.

7. PROTECTION AGAINST THE ABUSE OF POWER

REQUIREMENT

A control system must be in place to take action if the organization should overstep its mandate, e.g. by unduly interfering with the internal affairs of nation-states or favouring the special interests of individuals, groups, organizations, states or groups of states.

ANSWER

Any power that exists can be abused and there will be those who will try to do the abusing. The task is to make it as difficult as possible for the bad guys.

There are multiple mechanisms in the model which prevent undue concentration of power which might lead to abuse. Specifically it is the limiting of voting powers of the most powerful Representatives in both Criteria.

Another mechanism for checking possible wrongdoings is the Court of Procedure - an institution with the power to invalidate any decision found to be in conflict with formal rules. Much like a Constitutional or Supreme Court.

8. ACCOUNTABILITY

REQUIREMENT

It is a fundamental REQUIREMENT of a successful governance model that it performs the tasks it has been charged with, and the governance model must include the power to hold the decision-makers accountable for their actions.

ANSWER

This topic is closely related to the previous “Trust and Insight”.

It is within the capabilities of contemporary ICT to account for every individual vote of billions while still observing the legitimate protection of personal data - so that each voter can see how their one vote contributed to the whole, while not everyone can see how everyone else has voted.

Such capabilities have recently been made popular by Blockchain and similar technologies used to implement digital currencies like the BitCoin. The fact that people trust the technology proves a high level of trust for the system. One especially important virtue of these methods is the absence of a central register which is replaced by the “all know all” principle.

While the Blockchain in its current state will not be scalable to the level of billions of users there are no known obstacles to creating a similar system of a global magnitude.

Therefore we propose a system with ultimate accountability which (without sacrificing privacy) provides total knowledge of how any one person has voted or how their vote has been used

through delegation.

References

(1)

ID-card tip from Czech scientists

<http://news.postimees.ee/4236857/id-card-tip-from-czech-scientists>

(2)

PRESIDENT TRUMP ADDRESS 72nd U.N SESSION 2017

<https://www.youtube.com/watch?v=zkulAH8hW-0&t=1415s>

(3)

https://en.wikipedia.org/wiki/Pareto_principle

(4)

https://en.wikipedia.org/wiki/Pareto_efficiency

(5)

<https://en.wikipedia.org/wiki/Subsidiarity>

Clarifications of the Linear Global Governance Model

I would like to know more about your background. You specifically mention your knowledge of two fields: Cybernetics and Theory of Systems.

I have studied Physics with specialisation in Electronics. Most of my professional life I have spent on designing electronic and ICT systems and managing projects in that area. Therefore my prevailing frame of mind is "how to design it so that it works". I have some additional background in astronautics.

I also have some limited practical experience in politics which leaves me wondering how could we ever have ended with systems so senseless.

Both components of the voting system you propose (people and money) remain in the pocket of the powerful people

(In absence of strong reading habits and a culture of research by the general populace, what shapes the popular opinion? You guess it, Mass Media. (And growingly nowadays, Internet browsers and social networks). These corporations have no interest whatsoever in the welfare of the people or the health of the nation. They only care about their bottom lines.)

Yes I think this holds a lot of truth. For me this could be acceptable as a starting point (to reduce the resistance of the current powers) but unacceptable in the long run. How could the situation change toward the good?

1. Through education which MUST be an integral part of the new GG. People initially represented and controlled by the existing status quo will gradually learn to make their own inferences and decisions.
2. By reforming capitalism to slowly take economic power from the selfish minds to the giving mindsets.

You mention the need for "design against the menace of overwhelming complexity", and suggest two principles for doing so:

"keeping rules and principles simple"

This is an omnipresent wisdom of programmers and system designers. Every small addition in complexity adds to the measure of possible chaos and difficulty in maintaining

order and function. Another similar programmers' meme: "Design the data well and the program will write itself."

So the resulting attitude is to keep the designs as simple as possible as long as required functionality is achieved.

This is a principle similar to "Occam's razor" in scientific research which says that out of multiple explanations the simplest one is likely to be true.

"offloading complexity onto lower levels of the system"

Systems are composed of multiple levels of functionality. Some of them are "core" essential existential functions, others may be less critical. It is almost an art form to define and separate these correctly.

Take for example a big email system like Gmail: In the core there sits an enormous engine which fulfills the simple function of transporting messages among its users not caring about their content, formatting, user comfort etc. It just passes and stores messages and must do so with extreme effectiveness and robustness.

On another level the user needs a comfortable "interface" to work with the email to handle sorting, formatting, automatic replies, spellchecking etc. etc. which are important but not critical. These are handled by separate subsystems, even from other vendors than the core. That is where some complexity may be offloaded without compromising the effectiveness of the core and of the whole.

... third factor: Reputation

In my mind Reputation in the proposal works through delegation: People with good reputation are selected by others as their voting representatives.

your proposal ... dedicates a very large amount of space and effort to describe the operation of the Voting system

And ... small part to describe the macro framework proposed for the global governance system

This is true. Given the limitations of the submission format the voting (a.k.a. decision-making) process - as the core of the system - occupied most of my attention and text space. I am thinking about expanding the scope in the upcoming book.

You ... mention ... "we" and the collective project of a future book. Did you apply to the NSP as part of a team?

The "we" is basically an academic figure of speech. The submission was my individual. There were 2 friends involved on the level of consulting and feedback, not co-authorship.



The book may be created to put the brief paper into a wider context. It will depend on the level of interest in the proposal - e.g. whether there will be someone to read the book. If I am selected for the finals I will do my best to have the book ready before Stockholm.

Most important notions extracted from the paper

- The backbone of the model is the concept of Linearity, which we simply define as "striving to be directly proportional"
- votes are weighted according to two criteria: the number of people and amount of money contributed
- The weights of the highest 9 representatives are reduced to the value of the 10th voter in order to prevent any person or group from attaining an overwhelming power.
- Continual voting serves to provide an uninterrupted timely answer to constant questions.
- Existence of "Global Identity Management System" and the "Global Transaction Verification System"