

# Meso: A Structure for Networked Governance

## Authors

Laila Wahedi  
Anna Waldman-Brown  
Salman Aldukheil

Meso is a networked governance structure designed to fill the governance gap between international institutions and local actors. Meso allows a central governing body to select priority problems, while facilitating the local implementation of locally-appropriate solutions—without requiring the politicized international agreements necessary in more centralized institutions. This is accomplished through the creation of a global innovation network designed to create knowledge, facilitate its spread, and encourage implementation of solutions to prioritized problems. The Meso platform will be seeded with data from existing databases with input from grassroots organizers. Algorithms will recommend information and connections to users within the database. Knowledge will be generated and transferred through structured online and in-person meetings, which will build open source design patterns to translate lessons learned to others working on problems with similar local constraints. The platform will be gated by a structured peer review system to ensure diversity of ideas. By connecting local innovators to knowledge, stakeholders, and others working on similar challenges, Meso will encourage the best local solutions for global problems.



# 1. Abstract

Meso is a networked governance structure designed to fill the governance gap between state-level international organizations, municipal governments and community organizers. Meso will tackle global issues by encouraging locally appropriate action at the local-level. Meso will accomplish this by facilitating formation of global innovation networks, and the flow of focused information across them, bringing critical information to those who need it.

## **PROBLEM STATEMENT**

Meso fills a governance gap that traditional organizations are ill equipped to handle. First, Interstate organizations institutionalize power relations: they create a forum through which states coordinate, but cannot force a state to do anything that they could not otherwise be made to do. Moreover, because they operate at the interstate level, every state must often agree to one set of solutions, despite different needs. Meso addresses this by operating at a lower level: local actors take local action within a sovereign state. States themselves aren't compelled to do anything.

Second, Interstate organizations lack the bureaucratic capacity to understand local context. Humanity's toughest problems require more than a one-size-fits-all solution. Meso addresses this by facilitating generation of local solutions rather than trying to aggregate and impose them directly. It leverages local capacity, rather than trying to plan the marketplace of solutions.

### **Description:**

#### **Central Governing Body:**

A central governing body will select the overarching problems Meso will tackle, and focus areas within them, e.g., the steering committee may decide to address the sustainable development goals, and select issue areas within each. It will consist of country-representatives and self-selecting domain experts, ensuring selected priorities have political buy-in and are selected to maximize impact on broader goals.

An administration will coordinate Meso activities, comprised of two components: a technical platform and a human component.

#### **Technical Platform:**

The platform will have two components. First, a database of knowledge and people, which will be curated from existing databases, through advertisement and outreach, with input from grassroots organizers. The knowledge base will be curated through Meso's human activities described below.

Second, algorithms similar to those employed by Amazon, Netflix, and Facebook, will recommend information and connections to database members. These suggestions will be weighted to lay the groundwork for a communication network structured to facilitating problem-solving and the spread of useful information, even at scale. The algorithms will improve over time using human feedback and metrics about communication between members.

Algorithms will recommend two types of connections. First will be cross-geographical linkages within an issue domain, with a blend of connections



between like-actors and actors from different communities of thinkers, e.g., the algorithm would recommend engineers and social activists. This will facilitate a blend of easy cooperation and knowledge sharing among like actors with different experiences, while reducing group-think and encouraging users to challenge assumptions. The second kind of connection will be geographically based, designed to help local innovators navigate local regulatory environments, building ties to local regulators and policy-makers.

### **Human Component:**

While the algorithm can make suggestions, governance requires human action. Meso will facilitate creation of human connections and synthesis of knowledge through structured workshops through with curated information. These will begin with online small-group workshops designed around solving specific problems and issues relevant to participants who were selected by the algorithm. These online-workshops will feed into larger in-person workshops, whose participation will be gated by a carefully crafted peer review system, encouraging diversity of ideas and learning from success and failure. Workshops will connect experts with a sense of global efficacy, locals who know the local environment, aid granting agencies, and municipal governments.

In-person workshops will be structured around two components. First, participants will assess the impact of ventures on broader Meso goals. Toward this end, Meso will incentivize the involvement of experts with research grants that stipulate a requirement to contribute to the vetting of solutions presented by Meso members, as well as the Meso structure itself. Second, participants will synthesize and curate information for the knowledge-base in a way that's contextualized and will be most useful to innovators not present at the workshop, through the creation of failure reports and design patterns. These efforts will help create a meritocratic marketplace of ideas, ensuring the global spread of useful information.

Meso works because it doesn't impose solutions. It instead recognizes that different actors have different expertise, that when combined help them realize solutions. Meso operates in the middle, helping create the connections and promote the flow of information necessary to enable innovation.

### **ASSESSMENT**

**Core Values:** Meso works for the good of all of humankind by empowering local communities to better themselves.

**Decision-Making Capacity:** The Meso network provides local communities with information needed to make decisions on their own, thereby avoiding invasion of national sovereignty.

**Effectiveness:** Meso's reliance upon actor specialization and a scale-free network structure allows it to efficiently facilitate the curation and spread of valuable information.

**Resources and financing:** Meso relies on local actors to discover and implement solutions, enabling impact across a large geographical spread with minimal resources.



**Trust and Insight:** Meso will gain stakeholders' trust by inviting diverse voices to the table, and transparently publishing curated information and its algorithms under an open-source license.

**Flexibility:** Networked organizations provide flexibility by facilitating dynamic local solutions to local problems. Smart algorithms constantly adapt with new data. Contextualized design patterns lead to a variety of solutions that adapt to local contexts.

**Protection against the abuse of power:** By restricting its own scope to facilitating the actions of others, Meso avoids much of the danger that accompanies abusable responsibilities. Meso's algorithm will ensure a nonpartisan approach to automatically identifying the best stakeholders to tackle a given challenge, and every actor will have equal weight in the resulting discussion.

**Accountability:** Meso's peer review system will ensure that stakeholders are held accountable by one another. Meso's culture of acknowledging and learning from failure will help members focus on impact.

## 2. Description of the model

### INTRODUCTION

Meso is a networked governance structure designed to solve global problems by enabling local actors to make better decisions towards accomplishing international goals. Challenges like climate change and global health cannot be mitigated with a single solution—they will take a million small cuts to defeat. Meso enables the development of local solutions with global implications by helping to shape the spread of useful information to promote local innovation. Meso is a system made up of two integrated parts: a technological component designed to intelligently connect people, and a human social component designed to facilitate long-term knowledge sharing. By helping to spur focused innovation and fostering a helpful global flow of information, Meso provides networked governance at a level between local communities (i.e., provincial governments and community organizers) and international organizations like the UN, filling a critical governance gap.

Meso is an organizational structure template enabling a distributed approach to addressing existential human problems, such as climate change, poverty, and human conflict. It is applicable to any human problem, and can either be replicated as multiple organizations each covering one domain, or created as a single organization for multiple domains.

Meso forms domain-specific, cross-geographical linkages between innovators and domain experts to enable a peer-reviewed marketplace of ideas. It also fosters local-level linkages to help innovators navigate their regulatory environments and other local hurdles (e.g., access to alternative sources of funding when banks are unwilling to lend). Thus, Meso enables a competitive peer-to-peer flow of ideas through focused online interactions and workshops targeted toward assessing and distilling information critical to success. This network approach creates efficiency by bringing together individuals with specialized knowledge, including



domain experts, successful enterprises, and entrepreneurs with have local-level knowledge. Peer review vetting and the infusion of domain expertise will help the best ideas to thrive and diffuse.

Meso fills a critical gap between traditional multinational organizations made up of states (the UN, ICC, WTO, World Bank, IMF), and provincial governments and grassroots-level organizations. Traditional hierarchical organizations that try to reach down to the local level suffer from paralysis as they attempt to find consensus among states while navigating sovereignty issues and failures of bureaucratic capacity. Because no global actor can monitor every locality, they often attempt to impose cookie-cutter solutions while having little visibility into local context and efficacy. While these top-down organizations have their place—such as organizing multilateral efforts like the Paris Climate Accords—there is an important gap in the distributed governance space that we propose to fill.

Hierarchical organizations cannot plan solutions to existential human problems alone any more than they could plan a global economy. Successfully tackling these problems will require harnessing market forces for good in order to enable thousands of tailored solutions enacted at the local level. Meso employs networked governance to disseminate information and create linkages between relevant individuals, helping local communities find their own tailored solutions.

#### **CENTRAL GOVERNING BODY**

The central governing body selects which global problems Meso will address, and gives guidance on which issue areas within those general problems to prioritize. Steering decisions are shaped by both member state priorities and domain expertise about which issue areas will most impact the broader goals. For example, this body may choose to focus on the Sustainable Development Goal “climate action,” and look for issues in the areas of auto-emissions, sustainable agriculture, and disaster mitigation.

The central governing body is the only part of Meso that looks like a traditional international organization. It could be subsumed into an existing organization such as the World Bank or UN, or be created on its own. It consists of state representatives selected by participating states, and domain experts who select among a pool of state sponsored candidates.

World Health Organization (WHO) elections are a good model for understanding selection in the steering committee. They may be largely political, but candidates are still credentialed, which means that discussion incorporates subject-matter expertise into the the political competition. By blending expertise and political considerations when selecting areas to prioritize, Meso will build buy-in from states. If states feel Meso will help them to develop in those areas they deem most important, they will be more likely to facilitate Meso’s actions.

Under the central governing body, Meso’s administration follows steering guidance to coordinate Meso’s main activities. These activities fall into two key categories: maintenance of a technology designed to bring people people together and provide targeted information critical to their success, and a human element to make these connections effective, build buy-in, create working relationships, and curate information. The former will consist of a database of people and information and smart algorithms used to recommend ways to build connections among them.



The human component will use those recommendations to build real human connections, and curate contextualized and useful information valuable for Meso's desired social outcomes. By bringing the social and technological components together, Meso will be able to succeed where previous initiatives have fallen short.

### **TECHNOLOGY COMPONENT**

Meso will curate a database of people and information. To begin with, Meso will draw on existing databases such as USAID's Global Innovation Exchange, but the Meso administration will continuously work with grassroots organizers to curate a diverse membership through advertising and outreach. The database will be well-tagged and searchable, so that local innovators can readily find information and support. For the sake of privacy, Meso will mediate direct communication. If a user wishes to contact another user who has agreed to be contacted, Meso will send a digest email according to their preferences.

A smart algorithm will be used to bridge connections in a way that is consistent with social network theory on creating effective and scalable communication networks(1)(2). This algorithm will recommend contacts and information to users, and will be constantly updated through user feedback and relevant metrics. Similar algorithms are used in recommendation systems by Facebook, Twitter, Netflix, Pandora, Amazon, and others. By collecting network data, analysts at Meso will be able to evaluate the success of the platform and encourage the formation of efficient communication networks.

The algorithm will be designed to create two types of connections: domain specific cross-geographical links, and cross-domain geographical links. Cross-geographical links will help to form connections between innovators working on the same issue area, who may be able to share lessons with one another. For example, Meso will connect innovators and interested municipalities working on sanitation solutions. Those who are further along may be able to help local governments know how to invest, or how to partner with startups in other locations. Because they are cross-geographical, Meso introduces innovators who are unlikely to meet on their own and forms network bridges that allow more efficient communication.

Meso also encourages ties between innovators working in different issue areas within the same regulatory environments. This will help innovators learn to navigate their own system, without direct interference from Meso central. This allows Meso to encourage innovation and help support local collective action without impinging on sovereignty. In countries such as China, where certain forms of collective action may be discouraged, Meso will encourage increased government engagement in the network in order to maintain transparency and to help local innovators interact directly with local regulators.

Meso's smart algorithm will encourage the creation of scalable human networks that facilitate the spread of information, relying on social network theory to guide this process. Specifically, the algorithm will be weighted to encourage the formation of diverse connections among different communities of thinkers that may not have thought to seek one another out on their own. For example, the algorithm may encourage connections between engineers and activists working on a similar issue from different angles. Facilitated social interactions, described in the section below, will help to make these diverse connections fruitful. The algorithm will identify diverse connections by first identifying clusters of like-





members who are more likely to communicate frequently. By encouraging connections to be made between these clusters, Meso will help to spur innovation by helping members to see other perspectives and challenge their assumptions. This will help to reduce the groupthink that is often endemic to online platforms. This has the added benefit of shifting the structure of the innovator network in a way that will facilitate the rapid spread of information throughout the entire network, even as the network size increases (3).

The database will contain contextualized design patterns and failure reports, formatted in a standardized way to facilitate cross-sector sharing of information. These reports will be designed to provide information and insights on a granular, practical level about why specific initiatives failed or succeeded in specific contexts. This amounts to distilled lessons learned that can help innovators and cities to be successful in their own ventures. All information will be searchable with a detailed tagging system. More importantly, the database will also be a part of the recommendation algorithm, which will help to disseminate information to those who need it. This component of the algorithm will also improve over time as participants rate the information that is delivered to them.

The technical component described in this section cannot provide governance alone. Information and contact lists hidden in a database are not enough to create collaboration, identify socially impactful knowledge, or spur innovation. The human activities described in the following section will leverage the technical component into a networked governance platform to achieve Meso's goals.

### **HUMAN COMPONENT**

For Meso's technological system to produce the sort of innovation that will contribute to global problem-solving, two things are needed: real human connections, and a flow of valuable information between those humans. It is not enough to curate information in a database— that information must be used, and it must be the sort of information that will contribute to the implementation of new ideas. The human component of Meso is designed to tackle both of these challenges. Algorithmic recommendations will feed into online and in-person workshops designed to both create working relationships and filter information.

Online workshops will be frequent, short webinars with small groups that are either invited by the algorithm or self-organized. Unlike traditional webinars that are centered around listening to a speaker, Meso workshops foster interpersonal connections between attendees by having them engage in a formally structured problem-solving discussion centered on a question relevant to participant interests. These questions will be collected for each domain selected by the central governing body. Discussions will be focused on distilling a lesson learned or brainstorming solutions to a common constraint. They are meant to both be directly useful to the participants, and to contribute to the shared knowledge base. While the shorter online workshops may not result in a full report, users will have the option to contribute a memo on their takeaways. After each workshop, participants will complete an evaluation which will feed back into the Meso algorithms.

The online workshops will be a feeding ground for in-person workshops, which will be designed around producing design patterns and failure reports to be added to the knowledge base. These workshops will facilitate human connections



by bringing relevant individuals together in person for effective problem-solving and solution development. These workshops will be structured and focused, with time allocated explicitly to the specific parts of the “sharing and creating” process, supported by standardized templates within which to capture participants’ output. The rigorous structure will ensure that the time, energy and brainpower of participants is focused on synthesizing valuable information into key contextualized lessons that they can take home and that will be uploaded into Meso’s database for the benefit of all. Finally, workshops will be an opportunity to attract funding and interest from invited investors and grant-giving organizations.

Meso will run its workshops with the intention of maximizing quality output that can be used immediately. It will therefore adopt a rigorous project management approach—from clearly defining the objective of the in-person workshops, including the issue to be solved and its key levers/issues, to creating a workplan for the team, to allocating specific slots of time for the varying steps in the process, to defining and working towards explicit outcomes. Whereas existing “content sharing conferences” have difficulty sustaining their momentum after participants disperse, Meso’s focused approach will improve the likelihood of jointly-produced, useful output that will remain relevant long after workshops conclude.

In addition to sharing specific details about successful initiatives, Meso will facilitate the creation of design patterns: generic solution templates, that can be adapted for a variety of different contexts. For example, the provision of sanitation in urban slums is a perpetual challenge for city governments. Successful endeavors, like developing a system of turning sewage into fertilizer, may vary depending on different socio-technical contexts— but many of the fundamental aspects of such systems might remain the same across different continents. By facilitating the creation and curation of sets of design patterns and common failure modes, Meso helps successful ideas scale up and disseminate.

### **COLLECTING THE BEST IDEAS**

As recent events have shown, networks can help spread innovation and knowledge, or they can disseminate fake news, leading to greater misinformation. The structures described so far help create an efficient network for the dissemination of information, but Meso will also be designed to create a meritocratic marketplace of ideas where the most helpful information flourishes (4).

First, workshops will use **failure reports** to celebrate and openly discuss failure, modelled after those developed and successfully employed by Engineers without Borders Canada. These brief reports and/or presentations are partially a description of what went wrong, and partially an analysis of implications and lessons for the future; they are not intended to cast blame on individuals or organizations. To sustain a culture of transparency and critical discussion, participants will be encouraged to flag inappropriate behavior and provide feedback about how safe they feel discussing their failures through Meso. Failure reports will reduce social pressures to misrepresent success by creating a culture in which a failed venture is an opportunity for learning, and innovators can feel safe to admit failure and pivot towards future success (5). Market forces are most effective when there is complete information; by discussing where ventures do poorly, Meso increases the information that is needed for new innovation to improve.





Second, because workshops are designed around curating knowledge, levels of participation, topics, and presentations will be gated by a **peer review system**. While the algorithm will invite applications, peers from previous workshops will run the selection process for future workshops. Such peer review will help to reduce levels of fraud, selecting only participants with quality ideas who are ready and able to contribute to the broader issue area.

To ensure diversity of ideas, the peer review process will use a questionnaire that helps reviewers assess not just the merits of an idea, but also whether the member is ready to implement ideas they gather from the workshop. Different vetting will apply to different categories of proposals. For example, a proposal to speak, or to workshop a failed or successful venture, would be judged differently from an application to attend and learn ideas for a fledgling venture, or an application from a local government seeking ideas to implement.

Third, discussing what works and what doesn't is only possible if participants can accurately evaluate what works. Each workshop will feature mandatory **assessment sessions** to help participants assess their efforts relative to the broader goals set by the central governing body. Within the domain of climate change, a venture might assess the impact of a transportation initiative on reducing fuel emissions.

By training participants to always consider the broader global goals, Meso will help to avoid the trap of becoming too metrics focused at the expense of creativity and genuine efficacy. By maintaining a vision that focuses on broader goals, Meso will be more than just another database. It will curate content in a way that maximizes impact, rather than incentivizing ventures that play by an arbitrary set of rules to maximize metrics that may not be appropriate for every setting. For example, the Saudi government uses higher "employment numbers" to justify its "labor force nationalization" policies (Saudiization), but this metric does not represent the quality of employment or changes in real opportunities. The majority of jobs created by these policies are ones with no opportunities for personal or professional development or growth, such as doormen, security guards, and similar blue-collar jobs—roles created or increased to reach the minimum Saudiization requirement. A doorman receiving SAR 3000 a month is worse off than one receiving unemployment benefits because the latter has the opportunity for free career training.

Fourth, a culture of rigorous assessment will be facilitated by the incorporation of **academics and domain experts** at every level, from peer review to participation in workshops to assessing the functioning of Meso itself. Social scientists are trained to vet research designs, which means that they will make a valuable contribution to the assessment components of workshops. Scientists will contribute to the peer review process by introducing rigor into determining which innovations truly contribute to Meso's broader goals, helping to weed out fraud, and creating a culture in which rigorous assessment is valued. This culture, combined with a culture celebrating failure as a learning opportunity, will make a safe space for ventures to explore where they had a positive impact, where they did not, and why.

Meso will harness academic expertise by providing **research grants**, with clauses stipulating engagement in workshops and contribution to the evaluation of



Meso innovations. This will attract academic support to evaluate initiatives on their potential to create impacts relevant to broader development goals, as well as helping to evaluate the Meso system itself. This creates a win-win situation in which academics get access to the subjects of their research, while also contributing to greater good.

The nature of these academic partnerships can best be illustrated with examples. Currently, researchers partner with aid-granting organizations such as the World Bank to introduce randomization into the deployment of aid or development projects. Randomizing rollout allows researchers to simulate an experiment, and therefore assess the impact of the aid, without directly interfering with the aid provided. This is beneficial both to social scientists and the aid-granting organization, because it helps them make larger impacts in the future. As another example, researchers studying the relationship between communication and network dynamics on problem solving could use workshops and Meso data, in exchange for helping to improve workshops and the Meso platform. Engineers could share their new technology with local innovators, which helps both the local actors as well as the engineering team to better design a useful product. A researcher studying climate change might examine the effects of a new sanitation technology on water quality, thereby helping to vet that technology. The impact portions of these studies could then be contributed to the knowledge base, and researchers would contribute knowledge at workshops.

Fifth, users of the Meso platform will rate every interaction and be asked to complete periodic short surveys. This will provide **feedback** for the algorithm, helping to sort which users have more to contribute, and which are most serious about adopting new innovation. This will also help the algorithm to identify like-minded communities of participants and to facilitate the diffusion of the most valuable information between them. Through this human feedback, Meso will ensure that information flows are helpful, and improve these flows to better facilitate innovation.

Finally, by bringing many diverse perspectives together, Meso helps innovators to challenge assumptions and view potential solutions and problems through new lenses that might have been overlooked by any one community of thinkers. This creates solutions that are effective for a broader population, and helps to avoid the groupthink that can often occur within an epistemic community. The processes by which Meso encourages **diversity of ideas** are described in the following section.

### **ENSURING DIVERSITY**

Meso will ensure a diverse marketplace of ideas with three key mechanisms. First, the algorithm driving connections will be weighted to create ties between diverse thinkers and across different communities. Looking at previous connections, Meso will be able to identify groups of people and those like them that are more likely to communicate with one another. In addition to fostering these helpful clusters of similarities, the algorithm will persistently encourage “knowledge spillovers” from connections outside of those clusters to better foster innovation (6).

Second, a risk inherent to any peer review system is that peers can sometimes act as gatekeepers, encouraging ideas like theirs, from thinkers like them. This risks the creation of groupthink and a reduction in the diversity of ideas. To combat this, Meso will use two strategies to make for a more inclusive peer-review process.



First, reviews will be sent to different thinkers from different clusters as detected by the platform's algorithms. This will ensure that no one community can lock out a set of ideas. Second, reviews will be guided by a formal set of guidelines. Reviewers will complete a questionnaire that addresses whether the reviewed work is a novel idea, the rigor with which the idea has been evaluated by the presenter, and how it would contribute to the broader conversation. This will encourage the acceptance of ideas that may not have been successful or that the reviewer may not agree with, but that have the capability to contribute to learning and future innovation. Moreover, by asking different communities of thinkers, Meso can capture whether the idea is valuable in general, even if it is not perceived as valuable to one community of thinkers. By being exposed to others who think an idea is valuable and hearing their perspective at the workshop, greater understanding will be achieved.

Third, Meso will engage with groups that are already collecting grassroots actors and solutions in static databases to begin populating the platform with a diverse set of ideas. Such groups might include Honey Bee Network affiliates from India, Brazil, China, and others that have collectively documented over 100,000 innovations from rural villages worldwide— from putting chile powder in concrete walls to help keep out elephants, to boots that help coconut harvesters safely climb palm trees (7). Another partner could be the loose network of 4000+ fab labs, makerspaces, and bio-labs worldwide, which attracts thousands of young engineers, scientists, and other innovators with inventions to prototype (8). To supplement these technological ideas, Meso will also engage with local community organizers on various levels to bring in successful forms of societal engagement. Finally, Meso will collaborate with aid agencies and multinationals to aggregate, sort, and curate all their received grant proposals on one platform (where consensually shared), to gather information about various solutions and attempted projects worldwide. Meso's algorithm will sort these collected initiatives intelligently, providing the right information and connections wherever they are most needed. The platform will also provide basic translation (using existing translation services) to facilitate international collaborations.

### **FUNDING MODEL**

Meso's main funding sources will be participating states and for-profit organizations/investors. State members will pay for the opportunity to influence issue priorities. For-profit organizations/investors will pay for access to workshops, including topic-specific content and relevant stakeholders (academics, practitioners, grassroots innovators and local governments). Secondary funding sources include non-profit organizations and corporate giving branches, such as the Bill and Melinda Gates Foundation and the Robert Bosch Foundation. These sources will be important to Meso's success, but are secondary because unlike regular fees, they can be less predictable. Meso will strive to fund its administration from primary sources and long-term grants from secondary sources, while funding workshops and research initiatives with secondary sources.

As Meso evolves, so will its smart algorithms, which have revenue-generating potential through licensing agreements with large and complex entities looking to break free from the typical siloed way of working, and develop relevant connections between its employees or stakeholders to foster innovation.



Additionally, as Meso's network grows in the number of domain experts and breadth of content covered, it has revenue-generating ability as an expert network, through which clients (e.g., investors, professional service firms, non-profit organizations, corporations, etc.) may contract individual domain experts for ad hoc consulting services. This model exists today, a thriving example of which is the Gerson Lehrman Group. These secondary revenue streams will be in pursuit of Meso's broader goals, and will not drive Meso decision-making or organizational design.

### **MESO AND GOVERNANCE**

Meso fills a critical governance gap, operating at a level between community organizers and provincial governments, and traditionally hierarchical global governance institutions. Governance at the meso-level is necessary in today's globalized world.

The key strength of the United Nations and other global governance bodies is also what makes them ill suited to solving today's existential human crises alone. These bodies institutionalize power relations. They allow states to coordinate action more efficiently, but they cannot make states do anything that they either did not want to do, or could not otherwise have been made to do by force. Such institutions can act because they are underwritten by power, but this also limits what they can accomplish. For example, while the WTO allows states to collectively punish violations of trade norms, it cannot stop the United States from wielding its economic power to occasionally flout the rules at the expense of less powerful economies.

Thus, existentially important problems that manifest themselves in real human suffering get used as bargaining chips in global power struggles. Climate change cannot be resolved at the international level alone, as long as China fears that reducing its own carbon footprint will put it at a disadvantage relative to the United States, and vice versa. As a result, even where there is will for action among populations, initiatives fail at the international level because they are wound up with power concerns. If the fear of being taken advantage of by other states outweighs the fear of some impending crisis, it is possible that no state-level collective action can be taken— even if all states wish that more would be done.

Because there must be broad agreement, it is hard to find solutions that will work for everyone and therefore hard to find solutions at all. Since states will not tie their hands against their own interests, no other governance arrangement at the international level would be permitted by sovereign states to exist. Nonetheless, governance can still be extended at lower levels in ways that states would permit, thus helping the international community collectively tackle global issues.

Meso resolves these sovereignty issues by operating at a lower level. Most states will happily welcome an infusion of knowledge resources to help with sustainable development. Meso provides governance over global information flows in order to encourage innovation in ways that contribute toward broader goals. Traditional international organizations are still needed to coordinate state-level efforts—the WHO must still manage disease surveillance—but Meso fills a gap by allowing a broader range of local actions than those to which any interstate organization could ever agree.



Meso also helps resolve many of the equity problems inherent to a power-based international system. For example, the IMF is underwritten by the West, and implements many policies that inequitably benefit the West. Meso, on the other hand, spurs collective action at the population rather than the state level, and in-so-doing helps to overcome structural inequalities. Ideas compete in a meritocratic marketplace, and individuals are empowered regardless of their citizenship.

Add to these power struggles problems of hierarchical bureaucratic organization. Even when states can agree to act, it is difficult for hierarchical international organizations to implement solutions well. Problems occur at a global level and often in the abstract, but actions are taken in space and time by real people at the local level. An organization operating at the international level cannot monitor the local context everywhere where action must be taken. Instead, in those instances when the international community can agree to act, cookie cutter solutions are implemented that are universally palatable but may be more or less effective in different locals. For example, in order to monitor drug resistant tuberculosis, expensive diagnostics were sent to hospitals that do not have the capacity to use them effectively.

The sovereignty and bureaucracy problems are interlinked: the solutions that can be implemented are also constrained by what many states will agree to based on their own local constraints and needs. For example, even though global disease surveillance systems benefit the world as a whole, the diseases chosen for monitoring may be less important to certain states— leading those states to use compliance as a bargaining chip to have their more immediate concerns met. Because large organizations have trouble addressing small problems, cooperation is made even harder.

When the UN Foundation and the USAID-affiliated Global Innovation Exchange did try to engage with grassroots innovators in tackling the Sustainable Development Goals, they were hampered by their hierarchical structure. Rather than enabling local innovation in local contexts to resolve manifestations of global problems, they hosted an online competition with a panel of reputable judges from various sectors. Out of the 535 organizations that presented their solutions, thirty-five were shortlisted and eleven were finally chosen to present to dignitaries and policy-makers at the UN Solutions Summit. Sourcing local innovation was an important step, but rather than distributing the knowledge they aggregated, they could only choose eleven solutions to present within their hierarchy. What happens to all the second-best solutions? Or to solutions designed only for specific local contexts?

What this initiative failed to do was to provide governance to the grassroots level. The UN did collect knowledge, and all the submissions are accessible through an online library (9). Yet in practice, anyone who is interested in pursuing connections or similar ventures would have a difficult time drawing out lessons or collaborators from among the thousands of ideas. How will visitors to such a site know which solutions are best for them, and which partners could be most effective? How will they know which technologies are viable, and how to develop appropriate social systems around relevant technological innovations? Most importantly, the presence of information in a database is not the same thing as governance: useful information must be routed to those who need it and are ready to use it, in ways that foster problem solving.



Meso fills the governance gap by collecting innovation and intelligently passing it to those who need it, coordinating action among individuals, and facilitating interpersonal connections. Meso avoids the hierarchy trap by facilitating the creation of a network. Meso's administration does not need to have all the knowledge, or to implement solutions. Instead, Meso provides the governance infrastructure and relies on local and expert partners.

### **INTEGRATION**

By facilitating cross-geographical linkages, Meso will bring people working on similar challenges together. By integrating academic researchers into the platform, Meso creates a peer reviewed, competitive marketplace of ideas where the best ideas thrive and spread, and where it is possible to evaluate different solutions. Meso's database will provide the data for smart algorithms to effectively bring people together in online forums, which can feed into larger in-person workshops. This facilitates the development of tailored, locally-grounded solutions to global problems.

Meso is unique because it fills the networked governance gap. When top-down organizations such as development agencies and multinationals want to engage with local innovators, they tend to initiate competitions and libraries to aggregate solutions. While many of these initiatives have succeeded in attracting a wide range of solutions, they often facilitate one-off awards and brainstorming challenges rather than sustained linkages or knowledge-sharing. In addition, existing solutions libraries such as OpenIDEO and Engineering for Change are mostly focused on technological innovations, instead of the socio-technical systems that are often critical for successful implementation.

In contrast to existing platforms, Meso will encourage structured interactions based on network theory and underlying algorithms. Though existing platforms are mostly under-resourced subsidiaries of larger institutions, Meso will ideally have the resources and manpower of a full multinational institution or UN department– providing the platform with increased legitimacy and political clout when interfacing with potential stakeholders.

## **3. Motivation**

### **CORE VALUES**

Meso works for the good of humankind by empowering local communities to better themselves. Because decisions occur in a decentralized way, Meso does not impose its will upon on anyone, thus helping Meso to do no harm. Moreover, the meritocratic process by which Meso curates and processes information helps to spread valuable information rather than misinformation across the global network, and ensures that supported innovations have a genuinely positive impact on broader goals. The focus on training innovators to assess the impact of their ventures on global welfare helps to create a culture of doing good, while considering the collective consequences of individual local actions.

Meso values all of humanity equally. Because Meso operates at the meso-level, focusing on populations and individual innovators rather than states, it is not built on power relations in the same way that most international organizations are.





Meso's structure is uniquely suited to empowering individuals by giving them a voice, the opportunity to engage with others around the globe, and the knowledge resources needed to succeed, regardless of where they began.

The organization operates on the fundamentally meritocratic principle that good ideas can come from anywhere, and we need all hands on deck to tackle today's global challenges. Based on what the underlying algorithm determines to be the most successful multi-stakeholder gatherings, a Meso workshop might bring together city officials, corporate executives, and union organizers to share their views and collaboratively explore solutions. All workshop participants will have an equal voice at the table, as the Meso structure encourages ground-up rather than top-down solutions.

### **DECISION-MAKING CAPACITY**

Meso is designed to have maximal impact with no invasion of national sovereignty because all decisions are made by local communities. Meso achieves this by bringing local regulators to the table, and helping local actors navigate their local regulatory environments by creating partnerships among actors within a regulatory environment but across issue domains. For example, the social entrepreneurs we spoke to all wanted to connect with others who had done something similar to learn about pitfalls and best practices. The value of these connections is highlighted by the worldwide proliferation of incubators and accelerators, though these are often gated by venture capital.

Because decision-making and action happens at the local level, states and power holders at the international level do not have to agree on details in order to pursue shared broader goals. In order for Meso to make a positive impact, participating states must only agree on priorities at the most general level—such as the SDGs—which allows greater cooperation toward collective good. Moreover, there are no veto players. Although the participation of more states will lead to improved outcomes, Meso can still work to facilitate positive change if a state decides to exclude itself.

Meso helps actors make the best decisions at the local level. Meso facilitates such connections in four ways. First, the smart algorithm helps local innovators connect with others to interact directly. Second, online and in-person workshops are focused around building useful and lasting connections. Third, the workshops use failure reports and contextualized design patterns to curate exactly the information that participants need, while training them to better evaluate that information. Finally, the peer review system and infusion of academic expertise helps to vet ideas, helping the best solutions rise to the top. In this way, good ideas and helpful information are more likely to spread than bad ideas and poor information, yielding better decision-making all around.

### **EFFECTIVENESS**

#### **Meso in Theory:**

Meso was designed using demonstrated economic, behavioral, and network theory. Meso is a critical addition to traditional top-down approaches, because its network structure provides a level of reach and flexibility that cannot be achieved in a hierarchical structure. This is possible because Meso relies on efficiency from actor specialization (10)(11) and a scale-free network structure to allow for effective and distributed problem-solving.



Actor specialization means that different actors, from the local to global level, are endowed with different knowledge and skills. Actors at the local level understand local problems and contexts but sometimes have trouble grasping the global picture. Domain experts and global actors have generalizable knowledge about trends but do not have the capacity to learn every local context. Meso enables all actors to work together and share their expertise without having to operate at a level for which they are unprepared. Rather than imposing solutions on localities, or supporting initiatives without the capacity or local knowledge required for viable vetting, Meso enables local innovation by providing local innovators with the tools they need to succeed and to communally assess themselves and one another.

The scale-free network structures supported by Meso help to incorporate many people while facilitating the rapid and efficient spread of information, through forming bridges across communities of thinkers (12). This means that Meso is capable of being a truly global network while still remaining manageable for participants, and allowing useful innovation to spread quickly to those actors that need it most (13). This is achieved because Meso creates what are called network bridges– connections between actors in different communities who otherwise unlikely to meet. The platform algorithm is weighted to identify connections that will efficiently bridge different communities of thinkers, while workshops will help those connections form into working relationships while facilitating the diffusion of information. These structural features have been shown to facilitate problem solving and greater communication (14)(15)(16), combining the benefits of a small community of actors with the scale of a global database containing thousands of initiatives.

This approach spurs innovation across the entire network, allowing Meso to solve global problems through a multitude of small solutions.

### **Meso in Practice – Tackling Key Risks:**

Grassroots efforts are unlikely to successfully arbitrate disputes between nations or create globally-binding agreements. Nonetheless, local efforts are still critical for tackling global risks– including climate change, environmental degradation, violent conflict, extreme poverty, unmanageable population growth, and potential risks posed by future technologies.

In the aftermath of President Trump’s decision to abandon the Paris Agreement, climate change in the United States moved from the national stage to a regional issue; 211 cities and over 1,000 businesses leaders across the country have pledged to uphold the Agreement regardless of federal support (17). The individual efforts of businesses, city officials, and private citizens could have a substantial effect on both reducing greenhouse emissions and mitigating the devastation caused by climate change, especially if these actors were provided with a global platform to share best practices and discuss solutions.

Grassroots efforts have also been critical for resource management and environmental protection. Countering long-standing views on collective action challenges, Nobel laureate Ostrom (2009) describes how polycentric groups of local actors successfully collaborated to minimize environmental degradation of water systems, fisheries, and other natural systems (18). She emphasizes the fact that environmental protection will never succeed as a purely top-down initiative,



because people who live in delicate ecosystems must be engaged in identifying viable livelihoods that are compatible with sustainability.

Although grassroots efforts cannot substitute for top-down peace treaties, some of today's violent conflicts can potentially be tackled through decentralized, peer-to-peer networks– such as efforts to de-radicalize potential ISIS recruits (19), and community initiatives providing support and encouraging non-violence among gang members in El Salvador (20).

While the challenges of extreme poverty and unmanageable population growth often have their roots in systemic issues, most global successes to tackling these issues have operated through multi-stakeholder approaches on a variety of scales. For example, the former fishing village of Shenzhen became a globally competitive manufacturing hub through, in part, the dense interconnections and collaborations between small-scale electronics producers: a feat that could be replicated across different regions and sectors (21). When development efforts fail to adapt to local circumstances, they can exacerbate the problem; United States initiatives to build dams for the industrial development of Haiti and Afghanistan resulted in thousands of farmers losing their land and becoming impoverished. Similarly, birth control efforts are highly dependent upon local cultures and religions.

While it may be impossible to completely prepare for future existential risks, early evidence in the field of genetic engineering indicates the success of preemptive multilateral gatherings before the deployment of radical new technologies such as gene drives (22). By bringing stakeholders together at an early stage of research, Meso can help avoid future mistrust between scientists, policy-makers, and community advocates– paving the way for more effective and transparent mechanisms to control societal risks.

The creators of Meso are preparing to run a pilot with a multinational community of problem-solvers, to begin developing the requisite algorithms and test the platform's effectiveness in practice.

## **RESOURCES AND FINANCING**

### **Meso's Lean Operating Model:**

Meso enables on the ground action rather than trying to implement large programs on its own. While Meso may help connect innovators and funders, it does not fund directly. This light footprint allows it to have impact across a large geographical spread with fewer resources. As such, Meso's operating expenditures are primarily overhead and connection-facilitation.

Meso relies on human resources which fall into three categories:

### **Central Governing Body:**

Meso can source from an abundance of domain experts across leading academic and research-focused institutions, as well as practitioners in various fields. Participating states will sponsor domain expert candidates, and provide representatives to sit at the table of Meso's central governing body, during which they have the opportunity to voice their opinions on issues concerning their states.

**Administration:**

Meso will require a team of full-time employees to document and implement the central governing body's direction, maintain the network and database, and organize virtual and in-person workshops. They will also be tasked with marketing, developing relationships with, and onboarding corporations, nonprofits, local innovators, and domain experts. Marketing will involve recruiting individual corporate sponsors and nonprofit organizations. Marketers will also target grassroots organizers and innovators through partnerships and, most importantly, the successful launch of Meso and the demonstration of its success.

**Network actors:**

Experts will be incentivized by research opportunities and grants, workshop invitations, access to the Meso network and database, and opportunities for publication (particularly important to the academics and researchers). Innovators and local governments will participate in order to tap the implicit knowledge embedded in the Meso network, for the opportunity to workshop their ideas to better succeed, and to get exposure to potential partners or funders.

Funding organizations and investors will participate in order to have access to diverse but vetted ideas and innovators. Meso makes it easier for them to find quality investment opportunities.

*Incentivizing Through Reputation.*

To encourage participation online, Meso will use a "reputation system" similar to that successfully employed by Stack Exchange and Wikipedia. Incentives come in the form of tokens of recognition for contributions. Other contributors in a network award one another these tokens based on their evaluation of the work. A successful example of such a system is Barnstars (23), employed by Wikipedia contributors, and whose impact has been found to incentivize cooperative and valued work (24). An added bonus is that tokens can signal their credibility. This highlights the individual as an effective, and thus, desirable collaborator, making it easier to attract other contributors in the network to engage in the projects they are passionate about.

**TRUST AND INSIGHT**

Meso simply acts to bring stakeholders together; the organization will not make value judgements or directly influence the decision-making process. Meso will gain its stakeholders' trust by making a concerted effort to invite high-level officials and grassroots community organizers to the same table. Instead of excluding more autocratic states who are wary of citizen-organizing, Meso will include state actors in the process— which can also encourage a better understanding of the local environment and lead to more effective regulations. Meso will be inclusive and transparent about which actors are the most effective stakeholders for any given issue domain.

All of the final reports from Meso workshops and other interactions will be made public, although some working documents and interpersonal interactions may be anonymized, ensuring that stakeholders feel comfortable discussing controversial topics and addressing private concerns. Meso's knowledge-base and algorithms will be subject to continuous peer-review and revision. The algorithm will be publicly available for those who wish to inspect the code and determine its impartiality.



### **FLEXIBILITY**

Both the networked structure of Meso and its platform system are inherently flexible. Meso's machine learning algorithms will constantly process new information and feed this knowledge back into the overall system, and collaborations with experts through the peer-review process will ensure that Meso's knowledge base is up-to-date with current ideas and practices. The creation of contextualized design patterns and multilateral stakeholder model will lead to a variety of solutions that are readily adaptable to local contexts.

Meso will employ A/B testing to determine how subtle changes in its platform and workshop structure affect outcomes, and Meso's developers will make modifications accordingly. Such testing will be useful in determining the right ratio of structured to open discussion during workshops, to optimize the combination of brainstorming and dedicated problem-solving.

### **PROTECTION AGAINST THE ABUSE OF POWER**

By restricting its scope to facilitating the actions of others, Meso avoids much of the danger that comes with abusable responsibilities; it cannot interfere with national sovereignty because all final decisions rest with the nation-states themselves or other local actors.

There is a real danger that the stakeholders invited to the table over any particular issue could favor special interests– and threaten Meso's legitimacy as an unbiased actor. Meso avoids this in three ways. First, Meso will begin with a diverse database populated with extensive community input from multilateral partners and grassroots organizers, most of whom will have been vetted by researchers in the field and third parties. Starting with this diversity will help prevent any single interest from dominating. Second, the algorithm is weighted specifically to encourage diversity of ideas by spurring communication between diverse actors.

Third, the peer review system will be crafted to encourage diverse opinions and the inclusion of both successful and unsuccessful cases. An algorithm directs review to different clusters of actors, thereby increasing inclusiveness by including ideas that are valuable to different people. By including diverse opinions in workshops, Meso encourages real discussion and reduces bias. By starting with a diverse group of actors and relying on demonstrated techniques to maintain diversity of ideas, by the time Meso becomes more of an open platform, there will be enough ethical, dedicated problem-solvers on the platform to act as peer reviewers. The Meso community should then be able to balance any special interests by inviting opposing sides to the same discussion table, and giving every member equal weight in the discussion.

### **ACCOUNTABILITY**

Meso's peer review and internal rating system will help ensure that all stakeholders are held accountable by one another. Meso's dedicated focus on assessment at every workshop will help to further vet ideas. Meso's culture of acknowledging and learning from failure will help the network to focus on concrete impact rather than individual prestige, and the platform's comprehensive knowledge-base will provide examples of prior successes against which stakeholders can judge their own projects.



Unfortunately, as with every political body, some collusion between special interests may be inevitable– particularly if decision-makers in a particular domain have decided in advance what solutions to adopt. In these cases, Meso would not have the power to prevent legitimate decision-makers from carrying out their plans. Meso will instead bring opposing viewpoints to the table, forcing decision-makers to interact with and analyze successful, related initiatives through direct discussions. In the best case, this added knowledge might sway decision-makers to strive for better outcomes; in the worst case scenario, these decision-makers would have made their poor decisions regardless of whether or not Meso were involved.

Finally, Meso’s algorithm will be published under an open-source license and Meso will continuously accept public comments on the code. This allows external evaluation and recommendations regarding bias and equality in the algorithm.

## References

- Santos, F. C., & Pacheco, J. M. (2005). Scale-free networks provide a unifying framework for the emergence of cooperation. *Physical Review Letters*, 95(9), 098104.
- Klemm, K., & Eguiluz, V. M. (2002). Growing scale-free networks with small-world behavior. *Physical Review E*, 65(5), 057102.
- Watts, D. J., & Strogatz, S. H. (1998). Collective dynamics of ‘small-world’ networks. *Nature*, 393(6684), 440.
- Nunnenkamp, P., & Öhler, H. (2012). Funding, competition and the efficiency of NGOs: an empirical analysis of non-charitable expenditure of US NGOs engaged in foreign aid. *Kyklos*, 65(1), 81-110.
- Dodson, Leslie L., S. Sterling, and John K. Bennett. “Considering failure: eight years of ITID research.” *Proceedings of the Fifth International Conference on Information and Communication Technologies and Development*. ACM, 2012.
- Audretsch, David B., and Maryann P. Feldman. “Knowledge spillovers and the geography of innovation.” *Handbook of regional and urban economics* 4 (2004): 2713-2739.
- Gujarat Grassroots Innovations Augmentation Network. “Honey Bee Network.” Available from <<http://www.sristi.org/hbnew/aboutus.php>>. Accessed 25 September 2017.
- Ananse Group. “Atlas of Innovation.” Available from <<http://atlasofinnovation.com/map>>. Accessed 25 September 2017.
- Global Innovation Exchange. Available from <<https://www.globalinnovationexchange.org>>. Accessed on 29 September 2017.
- Shank, J., & Govindarajan, V. (2004). Strategic cost management: the value chain perspective.
- Carney, M. (1998). The competitiveness of networked production: the role of trust and asset specificity. *Journal of Management Studies*, 35(4), 457-479.
- Watts, D. J., & Strogatz, S. H. (1998). Collective dynamics of ‘small-world’ networks. *Nature*, 393(6684), 440.
- Latora, V., & Marchiori, M. (2001). Efficient behavior of small-world networks. *Physical review letters*, 87(19), 198701.





- Uzzi, B., & Spiro, J. (2005). Collaboration and creativity: The small world problem. *American journal of sociology*, 111(2), 447-504.
- Singh, P. V. (2010). The small-world effect: The influence of macro-level properties of developer collaboration networks on open-source project success. *ACM Transactions on Software Engineering and Methodology (TOSEM)*, 20(2), 6.
- Chen, Z., & Guan, J. (2010). The impact of small world on innovation: An empirical study of 16 countries. *Journal of Informetrics*, 4(1), 97-106.
- Domonoske, Camila. "Mayors, Companies Vow To Act On Climate, Even As U.S. Leaves Paris Accord." *National Public Radio*, 5 June 2017.
- Ostrom, Elinor. "Beyond markets and states: polycentric governance of complex economic systems." *Transnational Corporations Review* 2.2 (2010): 1-12.
- Talbot, David. "Fighting ISIS Online." *MIT Technology Review*. 30 September 2015.
- Lipsitz, George. *Youthscapes: The popular, the national, the global*. University of Pennsylvania Press, 2013.
- Lindtner, Silvia, Anna Greenspan, and David Li. "Designed in Shenzhen: Shanzhai manufacturing and maker entrepreneurs." *Proceedings of The Fifth Decennial Aarhus Conference on Critical Alternatives*. Aarhus University Press, 2015.
- Oye, Kenneth A., et al. "Regulating gene drives." *Science* 345.6197 (2014): 626-628.
- Barnstars. (n.d.). In Wikipedia. Retrieved September 28, 2017, from
- Kriplean, T., Beschastnikh, I., wikipedia & McDonald, D. W. (2008, November). *Articulations of wikiwork: uncovering valued work in through barnstars*. In *Proceedings of the 2008 ACM conference on Computer supported cooperative work* (pp. 47-56). ACM.