# WISDOM Of MYCELIAL

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## FUTURE-READY ORGANIZATIONS: FROM SUSTAINABLE TO GENERATIVE

U.S. apparel giant Patagonia made waves in September 2022 when founder Yvon Chouinard named Earth its only shareholder. Aligning its financial structure with its longstanding policies to uphold human and earth dignity, he understood that individuals create processes, and processes create the systems that impact the ecosystem.

Patagonia has long rejected top-down hierarchies for their susceptibility among other things to eventual collapse and chaos. Instead, it designs its structure to emphasize employee-driven and -managed processes where each person is "empowered with the knowledge of the right course to take, without having to follow a rigid plan or wait for orders from the boss."[1] regardless of where they sit. Like a champion sports team, its bench is as strong as its star players, evidence of author Sally Helgesen's argument that with organizations, "balance and harmony are essential if the periphery is to hold; if only the center [or top] is strong, the edges will quickly fray." [2] Patagonia also embraces flex working, long before COVID forced others to do so. It identifies talent based on "culture add." not "fit." According to CEO Rvan Gellert, it bases every decision on its values and purpose to "inspire a new way of doing business that puts people and planet first."[3]

While not every organization could or should be like Patagonia, to flourish in a reimagined global economy fueled by efficiency and innovation, future-ready leaders must orient their organizations for an economic future that recalibrates our notions of success. Sustainability only extends the life shelf of a one-way relationship. We must choose: continue a destructive path or co-create a generative ecosystem. To execute a recalibration at this scale, we need an extraordinary metaphor—one that disrupts long-held notions about competition and resources.



This is an inquiry on what smart, selfcorrecting organizations might learn from mycelium, the weblike, hidden, vegetative part of fungi that make up the largest living organism on Earth.

Yes. Turbulent times necessitate a grounded approach. The time has come to embrace a fundamental, yet radical set of precepts:

 the why: humans are a part of nature and a closed, regenerative, living system.

2. the how: a compassion strategy and networked structure lead to more generative and resilient decisions.

## 3. the what: teal organizational principles of decentralization reinforce generativity.

This is not an exercise in theoretical reflection nor a call for idealized disorganization divorced from reality. The transformation from human-centered, hierarchical structures to distributed, networked ones does not happen overnight. The proper conditions must exist. After all, growth and innovation require structure and stability.

Mycelium need four key things to thrive: substrate, humidity, oxygen, and warmth. Human-led organizations also require four key ingredients to create the "STEW" that nourishes a generative ecosystem: Systems, Tools, Energy, and Will.





#### Systems

all processes (e.g., decisionmaking, reporting lines, compensation) are designed for distributed networks

#### Tools

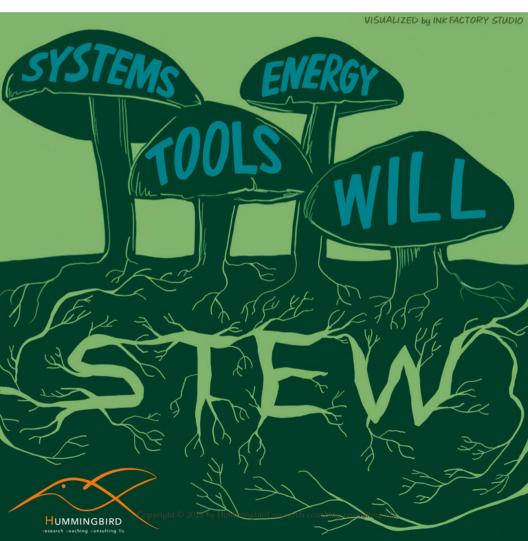
all members have the resources and skills for accountability, effective communication, and deep collaboration

#### Energy

all members understand and agree on the higher purpose and are invested in and excited by it

#### Will

all members are motivated to live out and protect the principles, particularly in times of uncertainty and change





## PRECEPT 1: THE WHY HUMANS ARE A PART OF NATURE AND A CLOSED, REGENERATIVE, LIVING SYSTEM.

RELATIONSHIP

NETWORKS

HUMANS ARE PART OF A CLOSED, REGENERATIVE LIVING SYSTEM

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After the murder of George Floyd, one HR department at a best-in-class, highly matrixed institution, tasked with training effective teaming, was told not to delve into topics around diversity, inclusion & equity. Why? Because that was the responsibility of the DEI office. Instead, the DEI office offered their own workshops to address how DEI is critical to...effective teaming. If that seems like redundancy, it is.

Forward-thinking leaders avoid such arbitrary divisions. They don't waste energy or time, but instead, do what nature has always done: make use of everything, show preference for what is good for the whole, and honor interdependency. As hedge fund billionaire Ray Dalio argued, "all the laws of reality were given to us by nature. Man didn't create these laws, but by understanding them, we can use them to foster our own evolution and achieve our goals." [4]

Yet human-led organizations often ignore the reality that humans are part of a closed, regenerative, living system. Rather, they have relied on the metaphor of a well-oiled machine with independent parts at best and a Game-of-Thrones battle with warring fiefdoms at worst. We separate Marketing from Legal. We market humancentered ESG initiatives as add-ons. Such myopic views lead to short-term solutions and long-term inefficiencies. They often don't make any sense.



The modern world overly relies on divisions-human from animal; human from plant; human from human. The economic model assigns humans on the "demand" side and all else on the "supply" side. Humans are at the top, the center, and the beneficiary. We act as if our survival depends on the destruction of others.

A different perspective is not new. While modern dictionaries define humans as independent of nature, many traditional worldviews understand humans as a part of nature. For a broader mindset shift, we invite the wisdom of the more than human world (mthw).

According to David Abram, the mthw is the entire biosphere comprised of plants, landforms, and animals, including humans. As part of one ecosystem, we are not so much interdependent as we are intradependent. When we make decisions with this understanding, we center the intradependent network of which humans are one small, and profoundly impactful, part.

This is where mycelium comes in.

Merlin Sheldrake called mycelium the "living seam by which much of the world is stitched into relation."[5] Being mindful not to anthropomorphize mushrooms, considering the similarities between the human brain and the mycelium 'brain' may help us to better understand how we exist, survive, and flourish.



#### **A.RELATIONSHIP NETWORKS**

One New England holding company guietly and powerfully invests millions of dollars and operates numerous companies around the world while citing ESG commitments. By many metrics, it contributes greatly to the health and wealth of their stakeholders. However, their good intentions to invest in ecofriendly companies are undermined by the collective impact of individual decisions made by a homogenous, elite team of men with similar training and lived experiences. Their handpicked clientele mirrors the team. The lack of divergent perspectives can perpetuate the systems they seek to change. There is little challenge to their ESG checkbox efforts that are often disconnected from core business practices, as shareholders ride electric cars to private jets and build with aluminum to lower transportation cost while overlooking its high carbon footprint.

As humans, we underestimate the impact a singular decision has on the whole, isolating one incident without addressing how one outlier has consequences on the integrity of the entire structure. For example, individual reinforcement of overwork and underpay or interpersonal drama exponentially repeated can ultimately lead to burnout or office toxicity. Or we blame corporate culture (the norms) without paying attention to climate (the experience). Yet as former IBM CEO Louis Gerstner, Jr. said, "in the end, an organization is nothing more than the collective capacity of its people to create value."[6] Or, to diminish it.



The human brain, much like organisms in the mthw, is a collection of individual neurons hardwired to see and make patterns. But human-formed patterns are often in disharmony, leading to repeated inefficiencies and waste. In the mthw, on the other hand, the dynamic adjustment of individual millions in turn create whole patterns designed for resiliency. For example, honeybees create the strongest singular shape possible, the hexagon, which then repeats itself to create structurally-sound colonies capable of housing tens of thousands. Nothing is wasted in the mthw.

Mycelium shapeshifts in relation to others, constantly adjusting to context and its environs. Mycelium doesn't have a central brain, at least according to traditional cognitive neuroscience. It is one organism made up of up to billions of individual tubular, threadlike filaments called hyphae. The hyphae have tips that grow, branch, and fuse. Constantly scanning their environment, they are simultaneously processing and integrating information to know where to go and what to avoid. Mycelium does not try to control its environment, but rather senses and responds to it, identifying appropriate symbiotic partners with whom individual survival depends.

Interestingly, the human brain is also a shape shifter. Daniel Siegel has argued that the human mind cannot be disentangled from its interactions with the external world. It is self-organizing, relational, and recursive, seeking, receiving, and adapting to feedback. There is no singular 'ruler.' Individual neurons reshape themselves in relation to each other. Like mycelium, our brain is a "living community of trillions of intertwining organisms."[7]



#### **B.SYMBIOTIC COOPETITION & EFFICIENCY**

In the 1980s, people were leaving the City of Denver in droves. Pioneer investor Jonathan Rose had a vision to transform the city's future with green, mixed-use housing, which would require the cooperation of 23 lenders accustomed to fierce competition with each other. Yet, by setting a vision and purpose bigger than their individual wins, Rose won a universal consensus that this deal would make or break the city. Each of the 23 wanted to be a part of the city's positive transformation. With this mindset, it only took two rounds of drafts to come to agreement, an astounding speed previously unseen. Forty years later, Denver hasn't looked back.

In short, human leaders have the choice to move towards the appealing: strategizing from an abundance model rather than fighting from a deficit one. Rose proved that with the right "STEW," it can be done.

How a leader chooses to direct their and their team's energy is critical to their organization's very survivalthey shape the climate, the relationships, and the flow of information. As Juniper Networks Chairman Scott Kriens reminded leaders, "energy is never neutral; it helps, or it hurts; there is no option for coasting." [8]





Deliberate attention to individual behaviors of 'doing' form the collective patterns of 'being.' This doesn't mean that individuals are always altruistic. After all, nature is not a utopia. Nature can be brutish and unforgiving. Yet while not all can survive, the longevity of one doesn't mean the utter destruction of all else. Competition and cooperation – coopetition – coexist.

Mycelium must be mindful of their own survival. Around for some 500 million years, mycorrhizal networks die and regenerate up to 60 times a year. Through tumultuous climate changes that killed off beings with far bigger muscles and human destruction that eviscerated micro-ecosystems, mycelium has figured something out.

To identify what would be beneficial for the survival of the self and others, mycelium maximizes the flow of energy and information. It transfers energy following a rather simple rule: go towards appealing things and go away from the unappealing. To do so, it negotiates deals beneficial for themselves and their fellow beings. Toby Kiers out of Vrije Universiteit Amsterdam found that plant and fungi have sophisticated trading strategies, giving and taking to compromise for what they need. Mycelium hoards and rewards.

While change and resource scarcity means not all organizations will survive, it doesn't mean that the destruction of others is inevitable. Rather, future-ready leaders are fiercely cooperatively competitive, bringing those around them along in the journey.



## PRECEPT 2: THE HOW A COMPASSION STRATEGY AND NETWORKED STRUCTURE LEAD TO MORE GENERATIVE AND RESILIENT DECISIONS.

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The teachings of mycelium and the nimble curiosity of the mycorrhizal may better prepare future-ready individuals to act in their own best interests and that of their future-ready organizations. This includes approaching the work with a strategy grounded in compassion and intentionally designing structures that leverage networks and intradependencies.

### A. A COMPASSION STRATEGY

The Wellbeing Economy Alliance (WEAII) is comprised of a growing network of countries including Finland and New Zealand. WEAII aims to redesign global economics "to create shared wellbeing for people and planet by 2040."[9] This alliance focused on economic health and planetary wellbeing is incorporating a strategy fueled by compassion into its work. WEAII was initially led mostly by women, which may not be a surprise to Sally Helgesen who noted that female-led organizations are more primed to "see the relation between the past and the future [and] move with the energy...to attract what is needed by law of synchronicity."[10]

Leaders no longer have a choice. Consumers use their purchasing power to say no to companies without compassion. The planet is saying no more of the same. WEAII offers evidence that wisdom and compassion create better strategies for all.

From a compassionate economic perspective, supply cannot be a one-way depletion to satisfy unquenchable demands. The call for more conscious leaders is not revelatory. We have long known that greater awareness of where and how energy is used results in healthier and more productive teams. Leaders who recognize that making decisions from a lens of compassion can better future proof their organizations. They know that strategy requires more than the hard skills of forecasting and analysis. It requires the even harder skills of wisdom and heart. They lead with a Compassion Strategy.

Strategy requires a long view with an understanding of how the past informs the present without getting stuck, and how the present informs the future without losing focus. According to Professor Vijay Govindarajan, such strategies preserve what works, destroy what doesn't, and innovate for adaptive resilience. They offer leaders clarity to see possibilities with a past-present-future orientation and a deep connection with others.[11]

In fact, the Tibetan word for strategy, thab-shay, means wisdom through the method of compassion. Championed by C+ suite leaders, such as former Cisco CEO John Chambers, Fiduciary Trust International Vice Chair Dr. Lisette Cooper, and JP Morgan Vice Chair Jeffrey Walker, these concepts are now part of corporate lingo with a call for industry-wide training on compassion in industries such as investment banking and finance.

These leaders ignore the outdated notion that compassion is soft or squishy. Compassion has always been embedded in the mthw to ensure survival. The give-and-take of organisms and stakeholders within the ecosystem is necessary for the system to thrive. For example, while trees show a preference for their 'daughters,' trees feed other 'unrelated' trees and as a final act of compassion when they die, provide food for other species, partnering with mycorrhizal fungi.

As compassion is a concern for the well-being for all, a Compassion Strategy includes:

- Centeredness: focusing with intention and choice, while embracing purposeful play;
- Courage: living with authenticity and purpose, while embracing healthy conflict; and
- Curiosity: adapting with innovation, while embracing paradox.

When leaders lead with compassion, they recognize that their ability to influence is strengthened by allowing others to flourish and designing supportive structures.



#### **B. A NETWORKED STRUCTURE**

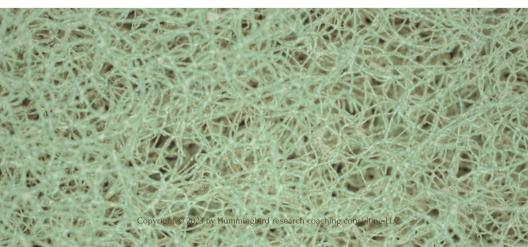
At Toyota, any worker on the assembly line can pull the Andon cord when they detect problem. Unlike in cartoons, this doesn't force everything to a screeching halt, but it does illuminate a light that immediately sends support to identify the root cause and find a solution. The capacity for anyone to have this authority is rooted in the now-famous Toyota Production System, which emerged in the 1980s/90s when American car manufacturers scrambled to catch up to Japanese auto companies that seemed to be consistently innovating cars while meeting current demands. Six Sigma, Just-in-Time, and lean manufacturing approaches were studied. One philosophy companies like Toyota was implementing is kaizen ('kai'-change; 'zen'-for the better), which reduced inefficiencies, improved processes systems for long-term benefits, and increased employee engagement. Kaizen humanizes the workplace by creating significant opportunities for practical solutions, such as ownership to the employees on the periphery to foster communication across different work units and functions, requiring "the leaders [to] feel comfortable learning from and trusting their subordinates, since those subordinates often possess vital knowledge beyond the scope of their superiors." [12]

Such trust requires leaders who can let go of the need to make every decision, especially when those decisions are often better done 'on the ground.' It is not unsupervised chaos, however; rather, deliberate attention is paid to the healthy "STEW" conditions. Redistributing power means a drastic shift from the inefficient and uninspiring top-down hierarchies of yesteryear. Instead, organizations with trust are based on overlapping and intersecting networks "redefin[e[ the role of those on the front lines, transferring authority to the perimeter...this is the real meaning of that ubiquitous buzzword 'empowerment."[13]



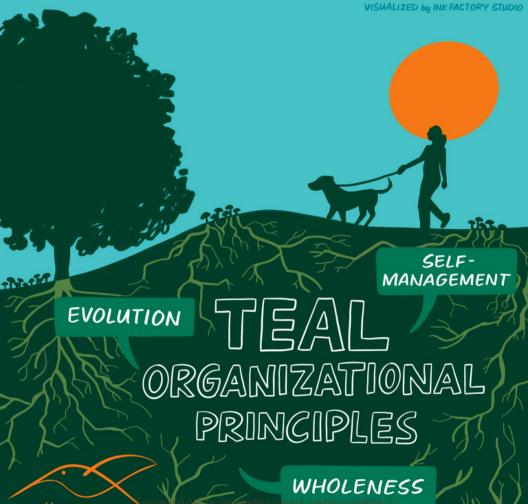
Helgesen's groundbreaking The Web of Inclusion profiled organizations, such as Beth Israeli Hospital, Intel, and Nickelodeon, that embrace a networked structure, similar to those found in the mthw. These organizational structures reject a pyramidal formation where the health of the organization depends on the pinnacle for a spiderweb-like one where the leader at the center is connected to every tendril in the web. They are grounded in the strategy that strength comes from interconnections, not from status and authority. They recognize that informal power structures are what creates the climate that determines the culture and effectiveness of the organization.

In mthw networked structures such as spiderwebs and mycelial, the relationships among the individuals allow for the organism to evolve, redefine itself, and respond to the everchanging environment. Likewise, when organizational structures give self-efficacy to everyone at any level, "people are free to take individual action, and the organization changes because they do. By enabling the parts to determine the shape of the whole, the web permits people at every level to leave their mark on their organization."[14] Ensuring information and knowledge extend to the edges where the action is, everyone has the capacity to make decisions. These are the future-ready organizations.





## PRECEPT 3: THE WHAT TEAL ORGANIZATIONAL PRINCIPLES OF DECENTRALIZATION REINFORCE GENERATIVITY.



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The ecosystem in which Patagonia is situated is not only comprised of the employees, but vendors, customers, and suppliers. While it can be easy to dismiss these stakeholders as afterthoughts, the more connected each 'tendril is to the organization, the more each recognizes their obligation for contribution. As Chouinard noted, "a problem anywhere in the system eventually affects the whole, and this gives everyone an overriding responsibility to the health of the whole organism."[15] This also means that it is willing to make tough choices for the good of the whole, knowing that "growth in one part of the company may have to be sacrificed to allow growth in another."[16] It ensures it has the right conditions of "STEW" to make it work.

How power and decision-making is structured must be examined as part of the "STEW." In Reinventing Organizations, Frederic Laloux called attention to organizational consciousness that mirror human evolution. Parallel to the energy vibrations of color, he noted that human organizations have shifted from authoritative, power-focused red, to stable, top-down amber, to growth, management-control orange, to empowered, culture-driven green. What is needed in the current now? Conscious, living-system teal.

Туре	Goal	Characteristics
Red	Power	Organizations with no formal hierarchy but clear division of labor to exercise authority
Amber	Approval	Formal, stable organizations with command-and-control rules for compliance
Orange	Get ahead	Process- and project-driven organizations with management driven by objectives
Green	Inspire	Decentralized, culture-driven organizations with servant leaders to empower teams

According to Laloux, Patagonia is a teal organization, a "living system [with] the innate capacity to sense changes in [its] environment and to adapt from within."[17] Not to romanticize it as a selfless-alwaysgiving-never-taking utopia, distributed power allows the free flow of energy. According to organizational network analysis by Rob Cross, the degree of innovation is directly correlated with the number of connections among the individuals within an organization.[18] The more connected, the more creative.

Teal organizations are noted by three characteristics:

- self-management;
- wholeness; and
- evolutionary purpose.

First, teal organizations are characterized by selfmanaging principles with distributed leadership and no leadership 'roles' that people are vying for. This doesn't mean anarchy. Authors Ori Brafman and Rod Beckstrom stressed that the rules existing within such systems are managed by a distributed power structure and reinforced by each member, resulting in greater buy-in. As NBA Hall of Famer and Executive Vice President Joe Dumars said, coaches hold players accountable on good teams; players hold each other so on great teams. While decentralization is not easy in practice and require a lot of trust and clear guardrails, Laloux observed that the leaders of teal organizations see better results.

For example, advertising agency WorkinProgress has five partners with equal say in every major decision. In an industry not known for egoless, boundaryless structures, its distributed leadership has led to some of the most powerfully creative and commercially successful campaigns. At Dutch healthcare company Buurtzog, decisions are made by dispersed, selfgoverning teams of 12 nurses. The 230+ year old King Arthur Baking Company is 100% employee-owned and constantly named a top B-corp company in employee engagement, profit, and commitment to planetary health.



The second characteristic of teal organizations is wholeness. Here, people can show up as their authentic selves. In 2014, Dr. Kenji Yoshino and Deloitte's Christie Smith found that over half of people "covered," or hid a part of their identity for fear of negative repercussions. 'Covering' wastes a lot of cognitive and emotional energy, as psychologist Robert Kegan noted, as it takes away from the actual focus on doing the job. [19]

Teal leaders and organizations replace fear with the kind of trust necessary for psychological safety, what is known as positive affective trust. Affective trust, or "trust of the heart," is built through empathy, concern, and the belief in the other's integrity and intentions. Laloux and others like psychologist Amy Edmundson have found that with trust comes accountability, and with accountability, comes trust.

The mthw has many examples of trust. When flying together, starlings pay the most attention to their seven closest neighbors, constantly shifting positions to ensure the burden is not on one bird-sometimes they follow, sometimes they lead. By knowing when to step up or support from the back, they trust their flock and can be vulnerable to ask for help when they tire.

Third, teal organization adapt for evolutionary purposes. Teal leaders create structures that give others decisionmaking power and agency. They embrace paradox and purpose because they know a 'yes-and' mindset can better leverage what is available, especially in resourcescarce environments, to survive and hopefully flourish. As PwC's Blair Sheppard and Susannah Anfield noted, leaders of today and tomorrow need to embrace complexity,[20] that one can be creative and efficient, competitive, and cooperative.

Distributed structures are deliberately designed to take advantage of how the human brain-and the mthwresponds and grows. Like spiderwebs and mycelia, organizations designed like a web "can send out new radials and axis as it grows, retaining flexibility and subdividing into a manageable size." [21] Its constant iterative shapeshifting allows it to address multiple problem at the same time. This requires a strategy guided by trust and patience to achieve its goals, not by force or pure will. Rather than a one-winner-takes-all approach, these leaders embrace a greater purpose.

Future-ready organizations honor what underscores all thriving living systems: reciprocity. In the mthw, no being is more important than another, one does not take without giving, and one does not give without taking. As decentralized organisms, mycelium have thrived for millennial because they have "no operational centers, no capital cities, no seats of government. There is no hierarchy, no leader at the top. Mycelial coordination takes place both everywhere at once and nowhere in particular."[22] A distributed structure allows for wiser and nimble decisions. If each hyphal tip were to wait for another hyphal tip kilometers away before responding to impending danger, they could not adapt and survive.

Teal leaders don't fear multiple realities or approaches. Innovation occurs with growth, and growth is dependent on shared wisdom. Harrison Street CEO Christopher Merrill spoke a simple truth, "if we're not growing, we're dying."[23] There is no staying neutral.





Particularly during times of uncertainty and upheaval, the right "STEW" - Systems, Tools, Energy, and Will - must be in place for generative growth.

As Frederic Laloux wrote: "Living systems have the innate capacity to sense changes in their environment and to adapt from within. In a forest, there is no master tree that plans and dictates change when rain fails to fall or when the spring comes early. The whole ecosystem reacts creatively, in the moment, Teal organizations deal with change in a similar way. People are free to act on what they see is needed: they are not boxed in... [but] can react creatively to life's emerging, surprising, non-linear unfolding."[24]

This is the wisdom of mycelium.



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