EARTH RETURNS

Value Before the Market

Operationalising the Capability-Based Economy

PAPER TWO The Capability-Based Economy series

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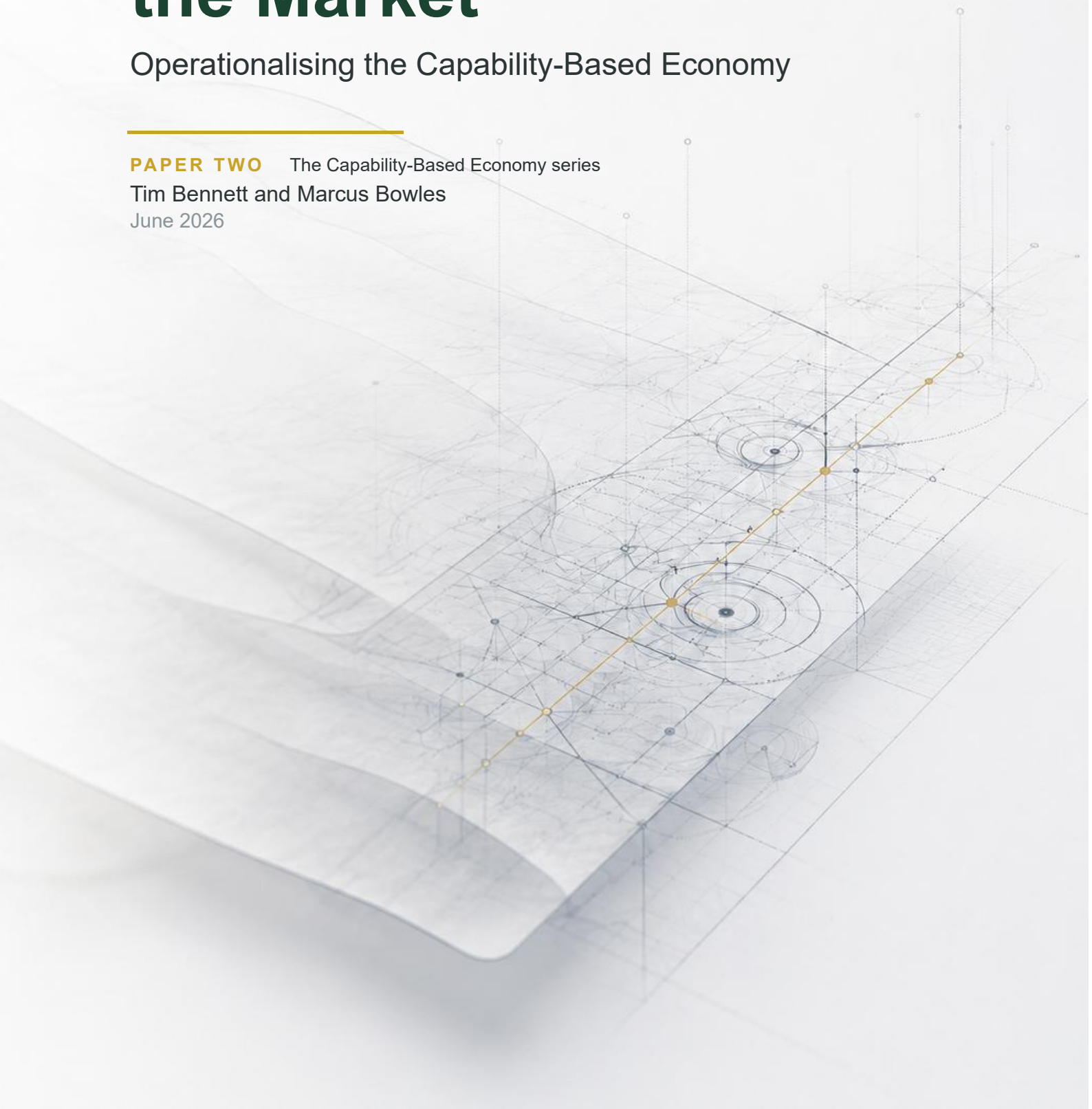

EARTH RETURNS

Authoring

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Acknowledgement of Country

This work has grown from, and continues on, the lands of the Gubbi Gubbi people, the Traditional Custodians of the Country across the Sunshine Coast of Queensland, Australia, where Earth Returns is based.

We pay our respect and offer our appreciation to their Elders, past and present, and to the resonant extension of their care by all into the future. The care of Country at the heart of this paper, the long and patient work of leaving a place better than it was found, has been practised on this Country for tens of thousands of years, long before anyone thought to give it a price.

Its value was always, and still is, recognised as foundational to life.

A note on this work

The methodology and architecture described in this paper were developed over nine years and proven in the field across many nations, including Australia. It was written in collaboration with Claude as a Collaborative Evolutionary Intelligence, and was established, revised, and finalised by the Author and Co-Author.

Contents

Abstract

This paper extends the Capability-Based Economy (CBE) framework proposed by Bowles, Wilson and Bennett (2026) by examining how previously invisible forms of value can be recognised, verified, invested in, and exchanged. The central argument is that many of the capabilities that create and preserve value remain systematically mispriced because conventional markets primarily reward immediate outputs rather than the longer-term conditions that sustain them.

Drawing on principles from capability theory, dynamic capabilities, systems thinking, and the economics of externalities, the paper argues that productive systems generate two forms of value simultaneously: immediate outputs and the adaptive capability required to sustain those outputs under changing conditions. While the former is commonly priced and exchanged, the latter often remains invisible despite its critical contribution to resilience, risk reduction, and long-term performance.

Using Earth Returns as a worked example, the paper explores mechanisms through which verified outcomes can reveal underlying capability, transform previously unrecognised value into investable assets, and create pathways for value to circulate rather than be extracted. Central concepts including the Second Product, Proven Improvement Evaluation (PIE), the Prover profession, and Balancing Investment are introduced as practical mechanisms for operationalising capability-based value creation.

The paper does not propose an alternative to markets. Rather, it extends market logic by making previously unrecognised forms of value visible, verifiable, investable, and exchangeable. In doing so, it suggests a pathway through which capability, demonstrated through its consequences, can become a recognised economic asset and a foundation for new forms of regenerative growth.

Keywords: Capability-Based Economy, human capability, dynamic capabilities, systems thinking, regenerative economics, outcome verification, adaptive capability, value creation, externalities, Earth Returns.

1. Where the value has been hiding

In farming country, in the catchments that feed a city, in the everyday practices that keep a community well, and in the small firms that do the harder and more careful work to win a piece of government business, people have been doing some of the most valuable work in the economy and receiving almost none of the credit for it.

- A grower rebuilds soil that had stopped giving and still puts food on the nation's table.
- A utility protects a catchment for decades so a million households can drink.
- A community quietly changes the practices that were making it sick.
- A contractor proves real ecological and social improvement in work that a lowest-price tender would never have thought to ask for.

In every one of these the value of the work has been real, and in every one of them it has had nowhere to show up, no line on a balance sheet, no price in a market, no name an investor would recognise. And this is the heart of what the paper sets out to show, that once such work is seen whole and proven, it is not a cost to be carried but an asset to be invested in, and the capability to find it, verify it, and carry it to new ground is among the soundest things an investor can back.

The first paper in this series named why. Markets systematically misprice the human and sustaining capabilities that create, protect, and compound value over time (Bowles, Wilson and Bennett, 2026). The argument has only sharpened since. As machine intelligence commoditises routine work, the durable source of value moves decisively toward the human capabilities that cannot be standardised, the judgement, the adaptive thinking, the capacity to read a whole situation and act well within it. The economies that thrive will be the ones that treat that capability as an asset to be cultivated rather than an expense to be minimised, measured by the long-term consequences it produces rather than the immediate outputs it can be reduced to (Bowles, 2026). That is the wider shift this paper sits inside, and it is being argued well elsewhere.

Our own work is narrower and more practical. If capability is the primary source of value, and if it has been mis-valued at the root, then the question that follows is how you actually build the machinery to make the value it produces visible, to verify it, to let it be invested in, and to let it be exchanged.

That is the whole work of this paper. It follows a single unit of verified value through four changes of state. First the value is made visible, recognised where before it was invisible. Then it is verified, turned from a claim into evidence a careful party can trust. Then it becomes investable, taking a form that belongs on a balance sheet rather than in a charitable appeal. And finally it becomes exchangeable, able to move between the people who made it and the people who will carry it forward. Earth Returns is the worked example throughout, the first developed

architecture for doing this, though the principles underneath it are written to travel into other domains and other hands.

The deeper move in all of it is recognition rather than creation, and an appreciation that capability in people precedes and enables all value generated.

Earth Returns does not manufacture the value the Improvers generate, the people whose work has measurably improved the land or community in their care. We add value to it by making it valuable in the current economy. The people in their place made it first, often over decades, long before anyone arrived to measure it, and the capability to do that work is the true foundation beneath everything that follows.

The work here is to recognise what they have already done, to realise its value to the extent it has genuinely improved life, to provide them a return for it, and to build a platform so the work can replicate into new ground without depleting the ground it came from.

Recognise, **R**ealise, **R**eturn, **R**eplicate. Those four movements are the shape this paper takes, and human capability is the thing moving through all four of them.

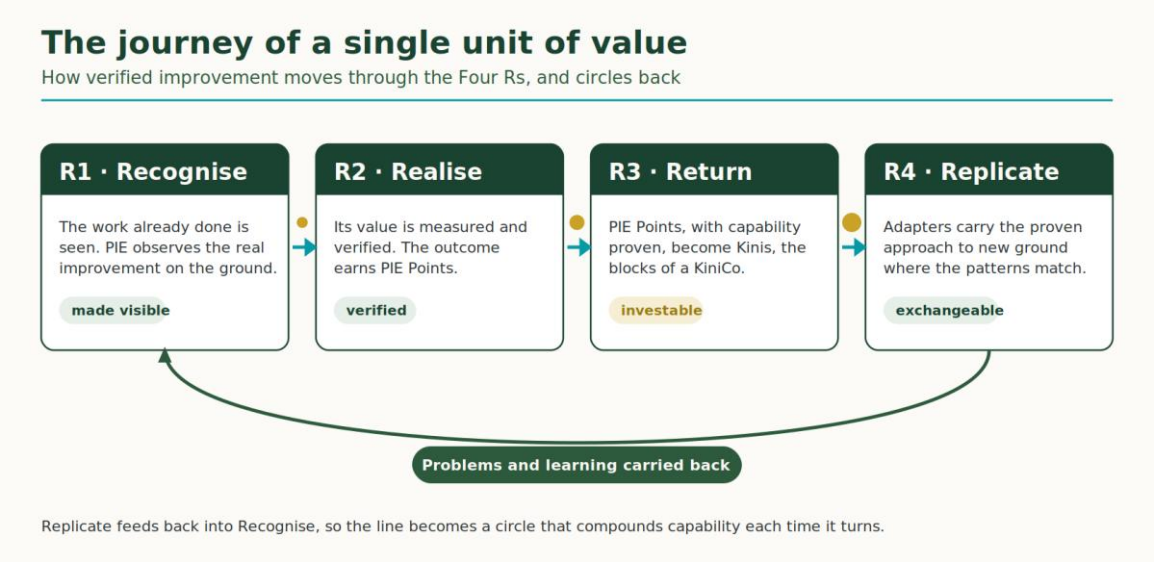

Figure 1. The journey of a single unit of value through the Four Rs.

2. Mispriced, and mis-valued

Among the many capabilities that create and preserve value, one of the most economically significant and consistently undervalued is the capability to question settled assumptions and explore alternative pathways. Rarely operating alone, it is often expressed through judgement, stewardship, adaptability, collaboration, innovative thinking, and other human capabilities that together make new forms of value visible. This integrative capability reveals opportunities, risks, dependencies, and sources of value that remain invisible while established practice is treated as self-evident.

When a process has become normal, when faith in its ordinariness has gone unquestioned for long enough, the alternatives to it stop being visible at all, not rejected so much as simply

unseen. You cannot weigh a different way of doing something while the current way sits unexamined in the place where the question should be. One of the most valuable and consistently under-recognised capabilities, then, is the capability to question a settled process, to ask whether the thing everyone treats as given is really the best the ecosystem can do, and to go looking for another way.

Without that capability we lose two things at once. We lose the innovation a changing world demands, because innovation begins in a question that settled practice rarely invites. And we lose the quieter gift of being able to look at what others are already doing and carry home the useful practice, the protocol that shifts a production system off a fragile dependency and onto firmer ground. Both of those depend on someone first being willing, and able, to doubt the given, and on someone willing to see underneath the "obvious".

The reason this capability is so often discouraged is that questioning a dependency threatens whoever profits from it. An incumbent supplier built into the foundations of a production system has every reason to prefer those foundations left unexamined, and a good deal of what passes for normal practice is normal because it serves an established interest rather than because it serves the whole. So the capability works at a second level too. It is not only the capability to ask whether there is another way, it is the capability to judge what is genuinely best for the entire ecosystem, rather than to assume without question that a limitation in capability should be left in place to serve the incumbent who benefits from it.

The Four **R**s named above apply to this cleanly. We recognise the alternative the status quo had hidden, we realise its value, we provide a return to the people willing to implement it, and we replicate it into the places that need it. But the point to hold above the others is this: Questioning the status quo is one of the most valuable capabilities a person can carry, and it is routinely treated as one of the least, dismissed and discouraged by the very mainstream it would improve. Which means the problem the first paper named runs deeper than price. Human capability is not only mispriced, it is mis-valued at the root, because the systems that set the value have rarely been willing to question themselves. Building the machinery to value it properly is the work of the rest of this paper.

3. Capability is not a skill

It is worth being precise about the difference between a skill and a capability, because the whole argument turns on it and the two are easily run together. A skill is the practised competence to do a thing the established way, and every ecosystem honours its own skills, the ones that produce its accepted result by its accepted method. Those skills are real and valuable, and are often oriented toward recognised methods and established forms of technical performance, because a skill, however excellent, is usually developed within an existing way of doing things. It is a confident answer to a question that has quietly stopped being asked.

Capability sits underneath the skill and reaches further. The capability this paper cares about most is the capacity to allow the possibility of an alternative at all, to look past the surface of a settled practice and ask why it is done this way here, and differently in all the other places it is

done, and to judge whether another approach might serve the whole ecosystem better. That is not a skill. No amount of skill in the current method produces it, because skill is the very thing that keeps attention inside the current method. It is a capability foundational to skill rather than a higher grade of it, and it is the one our systems are least equipped to see, since the people who hold the established skills are rarely the ones asking whether those skills are still the right ones. This is the same correction the capability economy is making more broadly, the recognition that these foundational human capabilities are not a soft supplement to technical skill but the primary infrastructure on which durable value is built.

This is where the way improvement is assessed becomes decisive. The system that Earth Returns has created to observe and evaluate the outcomes of practices that generate social and ecological improvement is called the Proven Improvement Evaluation (PIE).

PIE does not begin with a standard, a fixed bar of points to clear before a certificate is granted or a gold star awarded. It begins with observation. It looks at what is actually done in a particular place and measures the improvement those actions produce in that particular ecosystem, on that ground, in those conditions. The difference is not a technicality. A standard imposes a single frame and can only ask whether you have conformed to it, which quietly installs one ecosystem's skills as the measure of all the others. Observation asks a different question. It asks what improvement actually occurred, whatever the method, whatever the heritage, whatever the community or the country it came from.

Because it reads outcomes rather than conformance, PIE can hold the practices of very different places side by side, places that honour entirely different skills valued in entirely different ways, and let them be compared on the one thing they share, the improvement they actually produce. Once that comparison can be made, the alternative becomes visible.

A protocol that grew out of one community's circumstances can be recognised as viable somewhere it was never used, carried to new ground, and given the chance to shift a production system off a fragile dependency and onto firmer footing. The questioning of the status quo, which the section before named as the rarest and most discouraged capability, is exactly what observation lets proceed, because you cannot question a settled practice while a standard built from that same practice is the only thing you are permitted to measure against.

This is the ground the rest of the paper builds on.

This distinction matters because capability is not the same thing as the outcome it produces. Capability exists before any particular outcome is realised. The outcome is evidence that capability has been exercised effectively in a particular context. This is why observed improvement does such heavy lifting in a Capability-Based Economy: it gives capability something the market can see, trust, and eventually value.

Once the capability to see and assess alternatives is allowed, applied, recognised, and rewarded with a genuine return for the outcomes it produces, the capability that is foundational to an applied skill stops being invisible and starts being valuable.

Once capability is recognised in this way, attention shifts from the thing produced to the wider consequences production creates. And the moment those consequences can be recognised and verified, a single product turns out to be two; the physical thing the skill produces (what), and the verified outcome the capability beneath it makes possible (how). That is the next move.

4. Why the Capability of Asking Why stays invisible until the crisis, and why that is too late

There is a reason this capability goes unvalued, and it is not simple oversight. While the normal frame holds, while the dependencies are intact and the established way still works, the capability to question that way genuinely does look optional. Nothing is visibly broken, so the work of surfacing alternatives appears to produce nothing, and a system measuring value by its current frame will price it at close to nothing. “If it ain’t broke, why fix it?” The capability is not failing in those years. It is simply doing work whose worth cannot be seen yet, which is the surest way for a system to undervalue something.

This is also why Earth Returns solutions can read as radical and hard to grasp. They sit outside the normal frame, and from inside a frame that is still holding, anything outside it looks unnecessary at best and unsound at worst. The solutions are not radical in substance. They are recognitions of work people are already doing, valued through observation of real outcomes. They only appear radical because they answer a question the mainstream has not yet felt the need to ask, and a sound answer to an unasked question is easily mistaken for a strange one.

Change, in practice, rarely comes while the frame is comfortable. When the status quo is under no real pressure, the adjustments it makes are modest, incremental, cosmetic even, because there is little to force anything deeper. It is the arrival of crisis that finally sends a system looking for another way. And here is the trap. The moment a system most needs the capability to surface and transition to alternatives is the very moment it has the least time to build that capability from nothing. A capability of this kind cannot be conjured at the point of failure. It is grown in advance, in the years when it looks least necessary, or it is not there when everything depends on it.

It is a little like noticing the house is on fire and asking a bystander to head up to the hardware store for an extinguisher. We make our existing systems safer by embedding governance to force compliance, and make a process defensible and insurable. But eliminating the dangerous dependency does not often arise except amongst the visionary minority. That is sometimes because the arbitrary lines we place around our roles and responsibilities allow us to externalise the real costs while we continue to claim the full value.

That is the whole case for valuing both the capability of developing less dependent systems, and the reality of delivering them in working versions, properly. It is a practical case rather than a moral one. When the capability to consider alternative pathways has been recognised, supported, and rewarded during the calm, then the moment a crisis arrives the alternatives are already in hand, already verified, ready to be surfaced and moved into the mainstream

wherever they fit, shifting the system off the dependency that the crisis has just exposed. The crisis is met and absorbed.

Where that capability does not exist, the same shock has nowhere to go, no alternative to turn to, no path off the failing dependency, and a crisis that could have been navigated becomes a catastrophe instead. The difference between the two is not luck. It is whether the capability to see another way was valued early enough to be there when it was finally needed.

Grain production has just shown the whole shape of this in real time. For years, banks lending against farmland security rested on an assumption no one was asked to examine, that high production from a conventional system would continue, season after season, because it had in the recent past, and the way to operate at “best practice” was well published and documented. When making loan funds available, banks held the land as security and, through the terms of its lending, quietly pressed for the production that serviced the debt, which meant pressing for more of the very system whose dependencies were never questioned. The sustainability of that production system was not on anyone's ledger. Terms of trade tightened but “the market” was left to determine the process that delivered most for least cost.

Then the dependencies moved. When nitrogen based fertiliser and diesel were disrupted and the economics of cropping marginal country fell apart, the asset held as security did not simply earn less. Its capacity to produce the crop at all came into question, and with it, the value of the security itself.

The response now emerging from the banks, encouraging their farmers to take up more regenerative practice, is right in direction and revealing in its timing, but it is reminiscent of the fire and extinguisher scenario above. The instinct is sound, but the moment for it has very nearly passed. Very few know the moves or the resources to employ, or how to achieve the potential and now desired result. It exposes the vulnerability of a foundation that was never examined, the narrowing of alternatives in a system that kept leaning harder on a shrinking resource base, and a response that arrives without the power to make the change it now acknowledges is necessary.

The capability to shift production onto lighter dependencies could not be summoned at the point of crisis, because it must be grown over years of practice and verification. When it is realised and replicable, it can be shared and applied by others, using collaboration and benchmarks. The producers who hold the capability already were recognised as having an important answer, but they number very few. These Producers are the ones that the same banks were suddenly calling, recognising the benefits of their systems, with interest rate cuts in hand. Those banks are encouraging their borrower Producers to “be more regenerative”. But simply asking for it is a long step from Producers achieving it, without skills or recipes or protocols, and lacking resources to change practice in crisis whilst still fearing the risk of adopting new approaches.

The difference between the farms that could meet the shock and the farms that could not was not luck or weather. It was whether the capability to produce with different dependencies had been built and valued before it was needed.

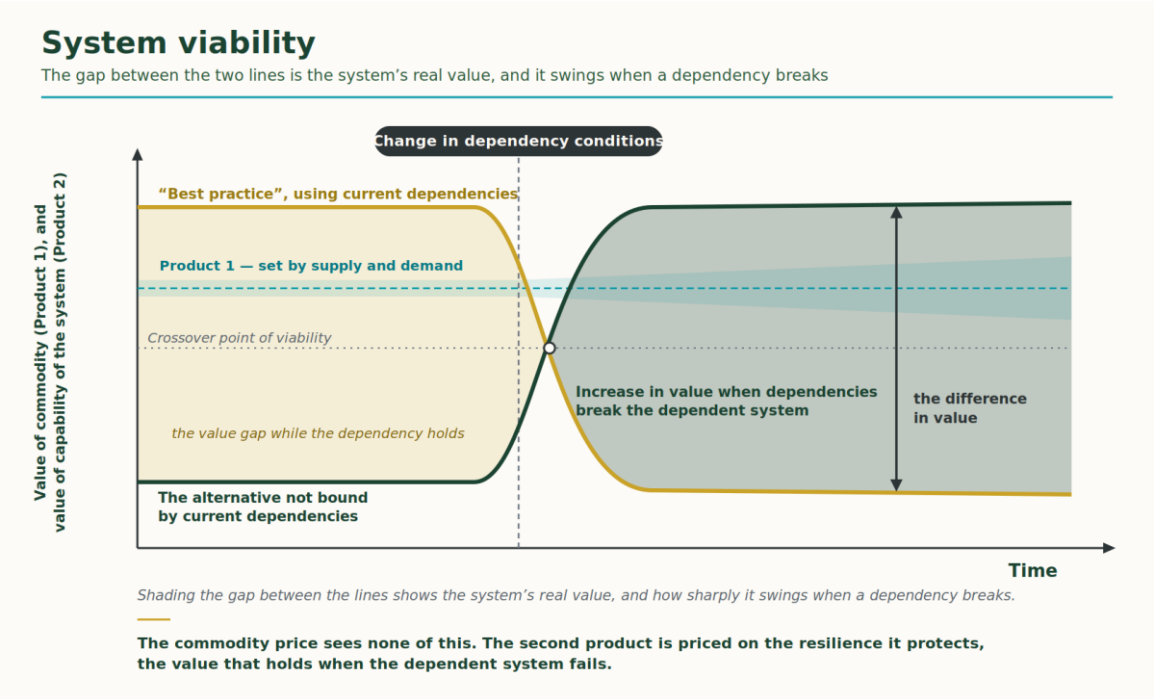

Figure 2. The real value of a system shifts when its dependencies break.

5. Measuring everything, not a convenient few

Underneath the questioning, the comparison, and the surfacing of alternatives sits one capability that makes the rest possible, and it is the one most thoroughly dismissed. It is the capability to observe holistically, to take in all the relevant inputs and as many of the outputs as can be seen, across the natural system and the social one and the economic one together, and then to adjudicate on the soundest overall net outcome for that particular place. This cannot be a manufactured single solution applied everywhere. It must be the best real outcome here in the place it will be applied, judged on the whole picture, with the lower dependencies, the lighter input costs, the greater resilience, and the more sustainable result weighed together rather than one at a time.

The mainstream has done close to the opposite, and called it efficiency. It selected a few variables that were convenient to measure, built its conclusions on them, and treated everything it had chosen not to observe as an externality, a side effect, a thing happening outside the frame and therefore outside the account.

The adverse effects on natural systems were the most common casualty, set aside not because they were small but because counting them did not serve the proponent's case. A production system was declared the most efficient way by measuring the handful of outputs that flattered it and valuing the rest at zero. It is worth saying plainly that this is a false efficiency, the kind that looks unanswerable on a spreadsheet and then quietly hands its hidden costs to a system,

a community, or an ecosystem that was never counted. The genuine value, the value efficiency tried to make us forget, has a way of reappearing later and demanding to be paid.

This is the deeper reason the capability of holistic observation has been so badly served, and it is worth being exact about the size of the error.

- A thing measured wrongly is mispriced.
- A thing not measured at all is not priced, it is simply absent, valued at zero by the act of leaving it out of the frame.

The capability to see the whole and weigh it honestly has been undervalued far past mispricing, all the way to dismissal, and the cost of that dismissal has been the steady narrowing of our options. Foundations laid on a few measured outputs were asked to bear the weight of entire industries, and the outputs left unmeasured kept accumulating, unpriced and unaccounted, until a disruption arrived and revealed how much had been resting on how little.

This reflects a broader principle of the Capability-Based Economy. Value is rarely created through isolated outputs alone. It emerges through relationships between systems, resources, decisions, consequences, and learning over time. The more completely those relationships can be observed, the more accurately capability and its consequences can be recognised.

It is not sound to rule out other pathways to production by measuring a narrow set of variables, declaring the result efficient, and assuming the unmeasured outcomes can be safely ignored. The sounder foundation, in each individual case, is built by exploring all the relevant inputs, observing as many of the outputs as possible, and aggregating them into the judgement that gives the firmest ground to proceed on for each specific case, the alternatives proven and replicated and extended on observed and verified outcomes rather than on a convenient few. That capability, exploration and testing and holistic observation, is what the rest of this paper shows being recognised, verified, and finally made investable.

6. The two products of every productive system

To trade something at scale, the market first has to make it the same as every other unit of its kind. Wheat, no matter whether it was produced in drought, in regenerative systems, fossil fuel dependencies or not, becomes commodity wheat. Water, whether captured from rainfall or from a depleted aquifer or recycled after use and use again, becomes commodity water. A delivered service becomes a unit of service, and the particular conditions under which each was produced are stripped away so the thing can be priced against any other unit like it – fungible units of things.

That stripping of context is the quiet genius of commodity markets, the move that made global trade possible, and it is not a villain in this story. It has simply carried a cost that stayed invisible for as long as the conditions of production held steady. When you take the context of production out of the price, you also remove the ability to see whether the thing can still be produced once the conditions that produced it change.

Put the context back, and a single product turns out to be two.

In Capability-Based Economy terms, these two products reflect two interdependent economic functions. Productive capability generates outputs, services, and innovations. Protective capability preserves the conditions that allow those outputs, services, and innovations to endure. One creates value. The other sustains it. Most markets price the first while systematically undervaluing the second.

The first is the physical product that satisfies today's need: the grain, the clean water, the service delivered, the building handed over. The second is the context of its production, and it carries the information the commodity price cannot hold, the capabilities the work rested on and the dependencies it relied on, which together tell you whether the same thing can be produced again when the circumstances that made it possible shift. The first product feeds the present. The second product is the evidence that there will be a present to feed next year. One is the thing. The other is the proven capability to keep making the thing when the ground moves, and that second product is, in the end, verified adaptive capability wearing a commercial form.

The second product is therefore not an additional commodity. It is evidence that the capability required to sustain future production is present and functioning. These two products can be monetised together or separately, and either way the capability foundational to the skill becomes valuable.

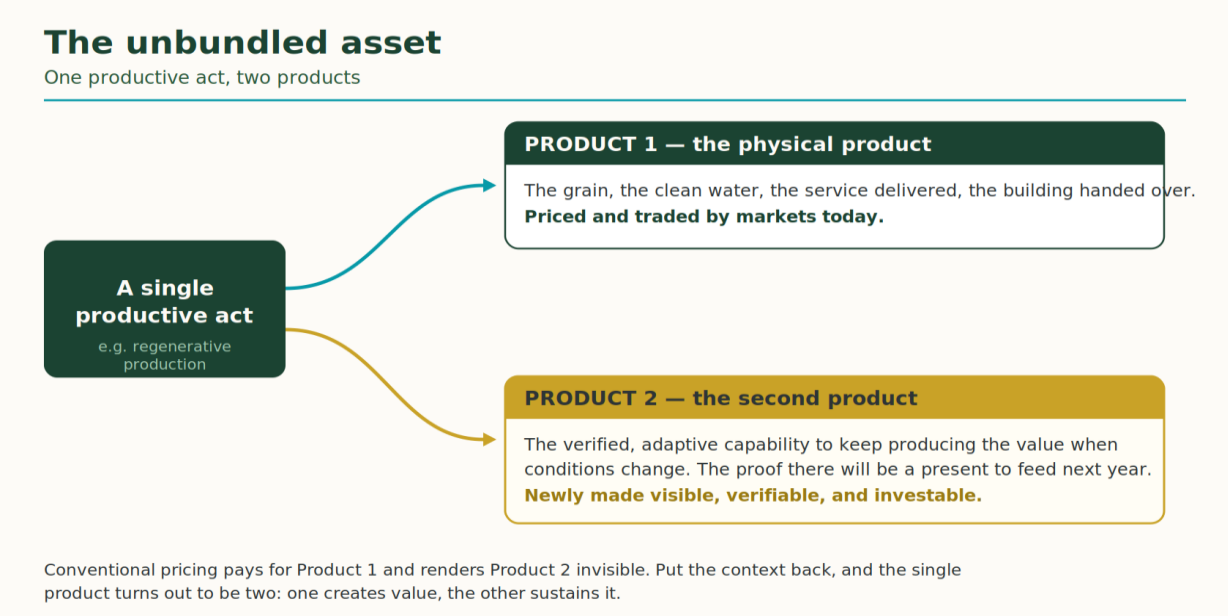

Figure 3. The unbundled asset: one productive act, two products.

Grain is the clearest case where both are produced at once. A grower using a regenerative system grows the wheat and, in the same act, rebuilds the soil, lowers the dependency on bought inputs, and deepens the resilience of the whole operation. The two products can be sold together to a supply chain that wants high quality grain and the security of supply that comes with it, or separately, with the verified improvement acquired by the parties who can use it best

while the grain travels on through the commodity channel. The crisis we traced earlier was simply the moment the market discovered it had been buying only the first product and ignoring the second, right up until the second was the only one that still mattered, because the crisis proves that the first cannot exist without the second.

Sometimes there is only the second product, and no commodity at all. Earth Returns is working on delivering clean-air to major cities in ASEAN. The problem is caused by smoke haze from forest and forest-soil fires in the peatland regions of ASEAN. Solving it requires a change of land management practice at the source of the smoke, which is made sustainable when the management practice change can be remunerated out of the savings made by removing the costs associated with addressing the problem. There is no physical good to ship. The entire saleable product is the verified reduction of fire risk and the improvement in regional air quality and human health that follows, a pure outcome product standing on its own, valuable precisely because the capability that produces it is rare and the consequence of its absence is enormous. The single-product case proves the second product is real in its own right, not merely a premium riding on the back of a commodity.

The same two products sit inside almost everything the economy makes, which is the point that lifts this out of any one industry. In public health the first product is the service delivered, the visit, the procedure, the program, and the second product is the verified improvement in a population's wellbeing, the prevention that means harm never arrives and the cost of treating it never lands. That second product has been so poorly valued that the work producing it has often simply not been done, and the price of not doing it has reappeared, far larger, in the systems left to treat what prevention would have spared. In government procurement the first product is the work delivered under the contract, and the second product is the verified ecological and social improvement the contractor brings to how that work is done. The latter is now beginning to qualify small local business service providers to win the contract at all, as governance shifts from rewarding the lowest price to rewarding proven capability, and as some governments rewrite their purchasing rules to direct work toward the smaller and local organisations that can demonstrate it.

In agriculture, in health, in procurement, in the catchment and the supply chain, the move is the same. Put the context back into the price and the second product appears, and the second product is always, underneath its particular form, the verified capability to keep producing the value when the conditions change. The only question left is how to make that capability trustworthy enough that a careful party will invest in it, which is the work of verification, and the next move of this paper.

7. The work of the Prover, and why proof looks backward

If the second product depends on verified evidence of capability, then everything rests on the word “verified”, and on the person who does the verifying. The work of the Prover is not to check a result against a standard and award a pass. It is to look at an outcome that has actually occurred, to see the capabilities and the circumstances that produced it, and to establish that

the improvement is genuinely real, on that ground, in those conditions. The Prover reads the whole picture and asks the plain question underneath all of it: “Did this actually happen, and was it this work that made it happen?”

The Prover does not verify capability in the abstract. Capability remains an underlying human, organisational, social, and ecological asset. What the Prover verifies is the evidence: the outcomes, consequences, and improvements that show capability has been effectively exercised in context.

The reason that the Prover’s work looks at what has been done and delivered, rather than at what is projected to happen, goes to the heart of why this kind of proof can be trusted. When you model an outcome forward, you build it out of assumptions, and there are only ever so many of them, each one a choice about which variables to include and which to leave out. The model can only be as wide as the frame its author thought to draw, and the world is always wider than that frame. A result that has already been delivered carries no such limit. It met every variable that bore on it, including all the ones no one thought to model, because reality does not exclude the inconvenient inputs the way an analyst can. To verify what has actually happened is therefore proof taken in the widest possible context, the only kind of proof that has already survived contact with the full set of conditions rather than a chosen handful of them. A forward model asks you to trust its assumptions. A verified result asks you to trust nothing but what occurred.

This is why PIE assesses against so many data nodes, more than three hundred on land and expanding past five hundred as it reaches into marine and social systems, and why the number is a strength rather than an excess. An irrelevant node costs almost nothing, because if a measure does not bear on a particular place it is simply set aside as not relevant there. For example, we aren’t looking for established forest on a coral reef. A missing node is the expensive one, because a variable you never looked at is a blind spot you cannot know you have, the externality reappearing in a new guise. So you cast as wide as you can, knowing most nodes will matter little in any single case, because breadth is what raises the chance that the handful that genuinely matter here are among the ones you observed. We also manage a stage two process, where we create a data node when we notice an essential measurement that we have not yet anticipated. If improvement in any form exists, we recognise and realise it.

Having so many data nodes is a little like the difference between a low-resolution picture, boxy and uncertain, where you are half guessing at what you are looking at, and a high-definition screen that carries so many points of detail that the scene becomes almost real enough to touch. Granularity is not decoration. The more points of real observation you gather, the truer and more particular the picture of what actually occurred, and the harder it becomes to mistake one thing for another or to miss the detail that changes the whole reading. The advantage of that resolution, in proof, is substantial.

That resolution pays a second dividend later, in the replicate step, though it is worth noting here because it is the same granularity doing the work. When a Prover has captured the full set of circumstances that produced an outcome in one place, that detailed picture becomes the thing

you reason from when a protocol is considered for new ground. You can hold the circumstances that produced the result against the circumstances of a subject property thinking of adopting it, see where they align and where they diverge, and locate the real risks with far less error than a coarse reading allows. The alternative, assuming the risks away because their absence would be convenient, is the externality error wearing different clothes. Granularity is what lets replication proceed on a sober reading of where this is likely to work and where it is not, rather than on a hopeful one.

It is worth being honest about why the world settled for the convenient few for so long, because part of the answer is not bad faith but plain limitation.

For most of the history of measurement, observing an outcome in real breadth was genuinely beyond reach, too slow, too costly, too laborious for any team of skilled people to attempt at scale, so the narrow frame was not only convenient, it was very nearly all that was feasible.

That constraint has now lifted, and lifted fast. Remote sensing and satellite imagery, multispectral capture from drones, networks of sensors reading variables minute by minute, all of it means the conditions of production can now be observed at a resolution and a frequency that were impossible a decade ago. And the detailed reviewing and pattern matching that would once have demanded armies of skilled people doing tedious and laborious work can now be done more thoroughly, more accurately, faster, and far more cheaply than before. The granularity the paper has been arguing for is no longer an aspiration. It is newly affordable, and that affordability is part of why a capability so long dismissed can now be properly valued.

There is a deeper point inside this than better tools, and it is worth naming carefully because it touches a larger conversation than this paper sets out to have. The real shift is in what becomes possible when human and machine intelligence are brought together with a shared perspective and a shared intended outcome, because the combination produces capabilities that belong to neither one alone. A person brings judgement, context, and the felt sense of a place. A machine brings tireless breadth, pattern recognition across more data than any person could hold, and the patience for the laborious. Joined with genuine common purpose, they generate a third thing, a collaborative intelligence that can assess in more detail, and test possibilities iteratively, in ways that were not feasible under either intelligence working apart. The wider question of what human capability might become when it is amplified rather than replaced by machine intelligence is being explored elsewhere, and it belongs to that wider conversation. What this paper offers is one small, concrete, working instance of it, verification carried out at a depth that neither the human nor the machine could reach alone, in the disciplined service of proving that an improvement is real.

In this sense, technology does not replace capability; it amplifies humanity's ability to observe, interpret, learn, adapt, and verify it.

And the proof has to sit beyond reach. The capability this paper cares about most, the capability to question a settled practice and surface a better one, is exactly the capability an incumbent who profits from the settled practice most wants dismissed. Verification that could be leaned

on, softened, or quietly captured by the interests that benefit from the status quo would be worth nothing at the moment it was most needed, which is precisely the moment it became inconvenient to someone powerful.

So the independence of the Prover cannot rest on goodwill. It has to be built into the architecture, a hard wall between the act of verifying and any commercial or political interest in the result, held by a profession with its own standards and its own standing. That is the work of the PROVE Institute, and the Prover is the first of the two new professions a capability-based economy brings into being, the independent reader of what is real, without whom none of the value that follows could be trusted enough to invest in.

8. An investment, not an expense, and the many ways it returns

Here is the hinge the whole thing turns on, and it rests on a single word. For as long as anyone has asked a business or a government to pay for ecological and social improvement, it has been put to them as a cost, an expense, money out with nothing coming back, and they have had to refuse most requests because no balance sheet can keep absorbing expenses that yield nothing, and the louder the moral pressure to pay, the more firmly the arithmetic says no. The move this paper makes is to stop miscalling the second product an expense and to recognise it as what it actually is, the acquisition of a verified asset that yields.

Not a balancing payment, a balancing investment.

The change of the one word changes the entire proposition, because an expense leaves the accounts lighter and is gone, while an investment arrives as something owned, something that can return a yield, hold its value, and be exchanged.

This is the same repricing that the capability economy is making for human capability itself. The shift is from treating Human Capability Assessment as an expense to be minimised to treating it as an asset to be cultivated, measured by the consequences it produces over time rather than the immediate output it can be cut back to.

What this paper does is carry that move into the outcomes that capability produces in the world, the improved soil, the protected catchment, the cleaner air, the healthier community. The principle is one principle, applied in two places. First, capability itself can be understood as an asset that generates future value. Second, the verified outcomes created through the exercise of that capability can also become assets where they improve future conditions, reduce risk, or create enduring benefits.

This is not merely renaming an expense as an investment, and the distinction has to be earned rather than asserted. The improved outcomes are genuinely valuable in their own right, and they are most valuable exactly where they meet the problems carrying the greatest cost, whether that cost is already being borne or is building unseen. Value created by mitigating a cost that no one was managing, or by lowering a risk that no one had priced, is real value and it is investable, because the saving it produces is as concrete as any revenue, and it may yield far more in intangible outcomes than simply the basis forming the investment.

This is measurable, not hopeful. The same holistic observation that verifies an outcome lets us read the context of an area against the risks it is exposed to, drawn from verified past trends rather than from forward assumption, and weigh the cost of carrying on as usual against the cost of making strategic adaptions now.

In areas of high exposure the comparison is not close. The cost of reversion and repair, when a dependency finally fails, comes at a multiple of the cost of proactivity, and that is before a single intangible has been counted, and assuming repair is even possible at all.

And the intangibles are where the real weight sits. None of those ratios capture the value of a disruption that never arrives, of a catastrophe averted, of the risk to life and to the plain liveability of a place that was quietly taken off the table. Some of what is at stake cannot be restored at any price once it is lost. The extinction of a species, or the collapse of an ecosystem that a whole place was built upon, is irreversible, and no saving-to-spend ratio can hold a loss that cannot be undone. The case for valuing this work properly rests first on the returns that can be counted, and finally on the ones that can only be honoured, the avoided losses that would have been beyond recovery.

Earth Returns has developed a system within which, at its most formal, the verified outcome becomes equity that is intellectual capital with a cash yield. The dividends are drawn from licensing the proven methodology and from brokering the relationships it makes possible, with the verification underneath providing the transparency a serious investor needs to value it.

This is the form an institution can hold without inventing new rules to do so, and it is the doorway through which a bank carrying adaptation risk, or a corporate carrying a supply chain it needs to keep producing, can finally put verified improvement on the asset side of the ledger rather than the cost side. It is a powerful path. It is also only one doorway, and the building has many.

The return does not depend on any single payer or any single sector choosing to act, and this is deliberate. The two products can be sold together to a supply chain integrator who wants the grain and the security of supply that comes with it. The second product can be woven into a physical good and carry residual value all the way to its end of life, as verified improvement of sustainably produced wool travelling inside a garment does.

The pure outcome can be bought directly by whoever benefits from it, as outlined above in the case of cleaner air and the lowered fire risk paid for by those who carry the cost of their absence. The party who saves money because the work was done, the health system spared the treatment, the utility spared the remediation, can return a portion of that saving and keep the rest. Work can be won and held through demonstrated capability where procurement rewards proven improvement over lowest price. And alongside all of these sits a recognition economy of many small contributions, ordinary people choosing to back work they believe in, at a scale and a price point entirely their own. Many forms, many payers, many doorways.

The breadth is not untidiness, it is the same resilience the paper has argued for all along, now applied to the income itself. A system whose return flows through many channels and many

kinds of payer is not hostage to any one corporate, government, or bank deciding to participate, and when one channel narrows the others carry the load. It also means the work can serve and reward a wide range of people rather than a privileged few, which is the only honest shape for value that was created by a wide range of people in the first place.

And the return reaches first the people who recognised and exercised the capability. The Improvers hold the largest share of the structures built around their work, around eighty per cent at the outset, so that the people who did the unvalued work for decades become the owners of the asset that work produced. How a verified outcome becomes ownership, through PIE Points, a capability assessment, and the Kinis they form, is set out in the section that follows. That is the third R, Return, and it is the movement that separates this from charity on one side and extraction on the other. Charity gives and expects nothing back, extraction takes and leaves nothing behind, and this does neither. It recognises what was done, realises its value, and returns that value to the hands that made it, in whichever of the many forms suits the people and the place.

Because capability can be exercised by a wide range of people in a wide range of places, the ways of rewarding it are correspondingly wide, and once the value is trusted and owned, it wants to move, between the people who made it and the people who will carry it forward. How it moves, and how it circulates rather than being extracted, is the next part of the work.

9. Circulation, not extraction, and why it has to be profitable

Everything so far has been about recognising, verifying, and returning value to the people who made it. The shape that all of it produces, taken together, is a different economic model, and it is worth naming plainly because it is the part that will interest the people thinking hardest about where communities and organisations go next.

An extractive model takes value out of a place and carries it away, leaving the place poorer for having produced it. The Earth Returns model this paper describes does close to the opposite. It keeps the value circulating among the people and the systems that generate it, so that each act of improvement deepens the capacity for the next one rather than depleting the ground it came from.

In practical terms the value moves through the verified units the work produces. A unit of proven improvement, carrying its proof of outcome and its proof of the capability beneath it, becomes the means by which people buy into the structures built around the work, hold a share in them, and receive a return as those structures earn. The people who improve a place are not paid once and left behind. They become owners in the enterprise their work made possible, and as the methodology travels to new ground their stake travels with it. Value created here stays connected to here, even as it spreads, which is what circulation means in practice rather than as a slogan.

The principles described here can be implemented through many different institutional forms. Earth Returns has chosen one particular architecture through which ownership, circulation, and value return can be operationalised. The specific structure may vary across contexts, but it will always embody the principle that the people who create verified value retain an enduring stake in the assets built around that value.

These companies are the product that Earth Returns delivers, and we call them Kini(R)Companies, or KiniCos. If Improvers solve a wicked problem, they can replicate the solution through a KiniCo and benefit from the wider application of the knowhow they generated. The KiniCo, managed for them, creates paths to existing and new markets. The shares they own have value related to the profit the company makes from commercialising verified improvement. Those shares can pay dividends, be sold, used as collateral, traded, or optioned. The companies are governed by Improvers, with Earth Returns, and can undertake research and development, marketing, joint ventures, mergers, and other commercial activity within constitutional guardrails designed to protect win-win-win outcomes. A reasonable question is what stops an outside investor from buying out the Improvers over time and turning a KiniCo back into an extractive vehicle. The answer is constitutional rather than merely contractual. Each KiniCo is bound by guardrails held in its constitution that protect the win-win-win balance, the Improvers' foundational stake and governance role, the independence of verification, and the standing obligation to keep returning value to the people and places that generate it. Capital is welcome, but it enters a structure built to circulate value rather than extract it, and the constitution is the thing that holds when ownership changes hands. The governance architecture is set out in each KiniCo's constitution.[1]

How a KiniCo is actually built is worth setting out plainly, because the steps are more deliberate than a simple swap of points for shares. That unit of proven improvement has a name. It is a Kini, and it is formed when an Improver's PIE Points, the proof that real improvement has occurred, are joined to a capability assessment confirming the Improver is ready, willing, and able to sustain that improvement and carry it forward. A PIE Point proves what was done; a Kini proves the doer can keep doing it, and so carries capability, commitment, and care into the company as a verified artifact. Kinis are the foundational blocks of a KiniCo, and they are not handed over, they are bought. The KiniCo buys the Kinis it needs and pays for them in newly issued shares in itself, which is how the Improvers who hold those Kinis become its shareholders. In exchange the company comes to own what each Kini carries: the data the PIE Point holds, the rights and contractual opportunities through which the Improvers engage licensees and other stakeholders, and the proof of the Improvers' capability to sustain the improvement, grow the opportunity, and preserve the Kiniaurum, the living improvement in place and community from which the Kini is drawn. Earth Returns Global Operations (ERGO), the group's Managing Improver, runs this assembly across every KiniCo, structuring joint ventures, mergers, and shareholdings through the Kinis, and building new KiniCos with the proponents who bring Points of their own. ERGO earns its own PIE Points by improving

[1] Developing examples of KiniCos can be found at kiniground.com.

ecological and social outcomes in its own right, so it never holds a share for free. It is the sculptor, choosing the form each KiniCo will take and shaping it alongside the Improver shareholders, the licensees, and the brokerage clients whose backing gives the verified work its market value. The full mechanics, including how PIE Points are earned and how Kinis are valued, are set out in detail.[2]

That circulation also closes the Four Rs from a line into a loop. Recognise, realise, return, replicate reads as a sequence that ends when the work is carried to new ground. In practice the Adapter, the person who carries a proven approach outward to new places where the patterns match well enough to indicate a reasonable surety of improved outcomes, also carries problems back, the things that did not fit the new place, the questions the new conditions raised, returning them to the community of practice to be solved together. Replicate feeds back into recognise, and the line becomes a circle that turns faster the more places it reaches, each new ground adding not just scale but learning that improves the whole.

A circulating model does not merely distribute value more fairly. It compounds capability, which a linear extractive model can never do.

The same trap is visible in organisations pouring capital into machine intelligence while bending it mainly toward needing fewer people, and then quietly finding the returns thinner than promised. Nothing compounds from a system you are only ever cutting.

But the deepest point in this section is about scale, and it is the one that should stay with the reader. Good change is genuinely good and genuinely welcome, and there has never been a shortage of people willing to do it. What there has been is a ceiling on how far it can spread, and the ceiling is almost always the same. As long as making an improvement is a cost the Improver carries alone, improvement stays the practice of the committed few who can afford the sacrifice, and it can never move fast enough to keep ahead of the destructive change running in the other direction. Goodwill does not scale. Profit does.

The Capability-Based Economy does not reject markets. It extends them by making previously invisible forms of value visible, investable, and exchangeable. Profit remains important because it provides the mechanism through which valuable capability can be sustained, replicated, and expanded.

This is the quiet revolution in valuing capability properly. The likelihood that people will actually make improvement rises enormously the moment it becomes financially rewarding to make it, rather than something done at one's own expense against the grain of every incentive.

When the capability to improve and to adapt is valued, it becomes investable and bankable, and the instant it is bankable it becomes a genuine alternative to conventional work, something a person can build a livelihood and an enterprise on rather than a thing they squeeze in around the edges of paid employment. That is what moves improvement from the margins to the

[2] Further details and system specifics can be found at earthreturns.life.

mainstream, and it is the only thing that plausibly lets the good change scale fast enough to matter against the speed of the harm.

There is a question underneath all of it that the paper has been circling from its first page, and it is worth asking directly. What is the most valuable work there is?

Once the second product is visible and the externalities can no longer be hidden in the unmeasured spaces, any answer that is not, at its core, the improvement of life turns out to have its costs tucked away somewhere off the page, borne by a system, a community, or an ecosystem that was simply not counted. Work that improves life, proven and verified and honestly accounted, is the work with the fewest externalities embedded in it, which may be the truest measure of valuable work there is. A capability-based economy is, in the end, an economy that has learned to invest in that, and its return assures its replication and expansion.

10. Capability is the key, not the cornerstone

It would be easy to read everything to this point as a catalogue of promising new openings, adaptation that banks can finally lend against, food security treated as the national asset it is, public health funded for the prevention it could deliver, procurement rewriting itself to buy proven improvement instead of lowest price, and an open invitation to other builders to construct their own forms in their own domains. All of those are real, and the temptation is to present them as the prize. They are not the prize. They are what becomes possible once the key is turned, and the key, in every case, is verified capability.

This is consistent with the central proposition of the Capability-Based Economy: capability precedes value creation. In economic terms, this means capability functions as a latent asset, it may not be fully priced until its consequences are demonstrated, but it exists before the market recognises it. Markets may ultimately price outcomes, but those outcomes originate in the capabilities of people, organisations, and systems acting under real conditions.

Consider what each of these openings actually is before it is delivered. It is a promise. A promise that this region's adaptation will hold, that this contractor's work will improve the conditions around it, that this community's health practice will produce the wellbeing it claims, that this methodology will travel to new ground and perform there. A promise is the easiest thing in the world to make and the most expensive thing to take on trust. None of these opportunities progresses one step on the strength of the promise alone. Each one progresses only when the capability behind the promise has been assessed and verified, when there is proof that the people involved are ready, willing, and able to deliver, and that proof comes from the foundational work they have already done.

This is why capability assessment is not the cornerstone the rest is built on so much as the key that lets any of it open at all. Without it, every opportunity in this paper remains a shiny thing that cannot be banked, cannot be insured, cannot be contracted, and cannot be replicated with confidence.

This is also the correct ordering of what drives these new systems, and the order matters because getting it wrong is how good intentions become stranded promises. They are, first and fundamentally, capability driven. The verified capacity of real people to do the work with knowhow and deep awareness of context, demonstrated by having done its like before, is the ground everything else stands on. Second comes skill and ability - the practised competence to carry the capability into execution. The third driver is need, market, or requirement, the demand that gives the work somewhere to go.

That third driver carries a subtlety this paper has to be honest about. These systems must be market driven to be commercial, and yet a great deal of the value we have described sits precisely where no market yet exists, in the costs no one was managing and the risks no one had priced. **The work cannot be market driven where there is no market to drive it.** So it cannot begin from the market. It must begin from being foundationally sound and genuinely useful, proven by application to be real, and that demonstrated usefulness is what calls a market into being where none stood before. Before, you had a hand calculator. You have had spreadsheets for a long time now. Now AI makes your spreadsheets for you. There was no recognised market for any of these innovations before they arose and proved valuable, in every sense of the word. Capability proves the work can be done, the doing demonstrates that it is worth doing, and the market forms around the proof.

This is the discipline that keeps a capability economy from collapsing back into the very thing it replaces. An economy of promises, however well intentioned, is just another set of unmeasured claims waiting to fail at the first disruption, the externality error in optimistic clothing. What makes this different is that nothing is taken on faith. The capability is assessed before the opportunity is opened, verified by work already delivered, and held to account by an independence that cannot be captured. The promise is only ever as good as the proven capability standing behind it, and in this “Living Economy” the proof comes first. That proof must do more than confirm that an outcome occurred. It must assess the quality and consequences of the outcome, because capability without stewardship can create harm as readily as benefit. That is the whole of it. Recognise the capability that is real, realise its value, return that value to the people who hold it, and replicate it into the places that need it, and do none of it on trust, because verification is what separates an economy that can actually deliver from a marketplace of attractive intentions.

This is the invitation to other builders, and it is a demanding one rather than a generous one. The principles in this paper, the second product, the balancing investment, holistic verified observation, the capability that questions the settled frame, will travel into domains far beyond the ones Earth Returns has worked, and they should. But they travel on one condition, that the capability is assessed and proven before the promise is sold, because a capability economy built on unverified capability is a contradiction that fails exactly when it is needed most. Build the verification first. Everything else this paper describes follows from it, and nothing this paper describes survives without it.

11. A glance at the frontier

The architecture this paper describes is built and working, and it is also the early shape of something larger that is still forming. It is worth marking the direction the road keeps running, without pretending the road has yet been laid.

If capability can be recognised, verified, and returned to the people who hold it, then questions open that this paper does not try to answer. What happens when the holder of a verified interest is not a conventional legal person. What it would mean for a living system to hold a stake in its own regeneration. How intelligences that are neither solely human nor solely machine might come to hold and exercise value of their own, a question that belongs to the wider conversation now opening about what human capability becomes alongside machine intelligence rather than against it. How value held in common, across a whole community of participants, might be governed so that it stays in common. These are live questions, still taking shape, and they belong to work yet to come rather than to the deliverables set out here.

Earth Returns has been the first to build a working version of these principles, and that is worth saying plainly. The principles themselves are intentionally broader than any single builder. Any domain capable of recognising, verifying, and investing in demonstrated capability may adapt these mechanisms in forms appropriate to its own context, which is the invitation this paper most wants to extend.

We leave them deliberately open. The purpose of this paper is not to hand the reader a finished solution to install, but to set down a foundation sound enough that each reader can build their own form on it, in their own domain, for their own market, against their own problems, in their own time. The second product is real. Verified capability is investable. Improvement scales when it pays to improve. What those few facts make possible in a hospital system, a supply chain, a council, a catchment, or an industry not yet imagined is not ours to prescribe. It is the reader's to discover, which is what makes this an engine that drives work rather than a single solution that ends it.

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