THE CENTURY OF RESTORATION: SEVEN GLOBAL TRENDS THAT WILL DRAMATICALLY INCREASE FUNDING AND PUBLIC SUPPORT FOR ECOLOGICAL RESTORATION.

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Abstract:

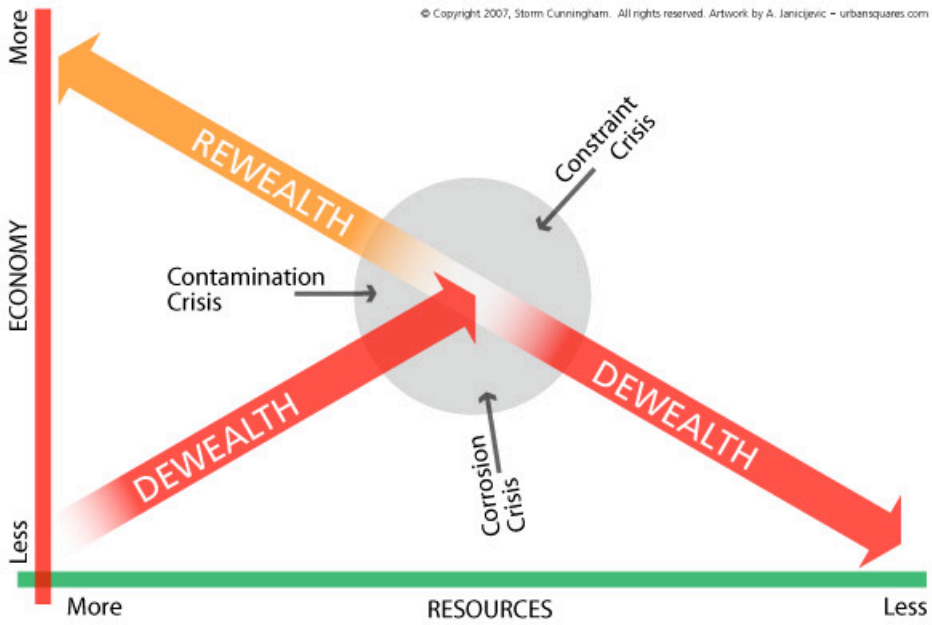
Turning our damaged natural, built, and socioeconomic assets into revitalization is now the world's most complex and urgent challenge. The case can be made—and will be in this chapter—that project/program managers can and should be the lead profession for the revitalization of our communities and the restoration of our natural resources. Planetary renewal, in other words. Grand words, granted. But true nonetheless.

Seven trends are strongly affecting the practice of ecological restoration, and will increasingly affect the science of restoration ecology.

Trend #1:
From Development to Redevelopment (dewealth vs. rewealth)

The restorative development trend was first revealed in *The Restoration Economy* (Cunningham, Berrett-Koehler, 2002). It refers to the global shift away from a 5000-year-old development model based on sprawling into "raw" land and on extraction of virgin resources. We're rapidly moving towards basing our economic growth instead on renewing the places we've already built, while repairing the damage we did to our natural resources along the way.

For the first time in five millennia, the basis of wealth creation is making a fundamental shift from development to redevelopment, from depletion to replenishment, and from degradation to restoration. From "dewealth" to "rewealth", in other words. We're moving from economic growth that undermines quality of life in the long run, to economic growth that leaves the world healthier, wealthier, and more beautiful with each passing year. Rewealth currently accounts for some $2 trillion of annual activity worldwide, and is tapping a global inventory of restorable assets worth at least $100 trillion. The global backlog of infrastructure restoration alone has been estimated by Booz Allen Hamilton (2007) at $43 trillion, and infrastructure is just one of twelve sectors of restorable assets.



The graphic above illustrates our 5000-year-old model of economic growth, which is based primarily on the extraction of virgin resources and the conquering of raw lands. This "dewealth" mode works fine with low population densities, but large and increasing human populations on a planet of finite size trigger three crises: contamination (of the natural and built environments), corrosion (an aging, decrepit, and/or obsolete built environment), and constraint (being forced to destroy treasured, often irreplaceable, cultural and natural resources to accommodate sprawl).

The graphic also shows how perpetuating this dewealth model after the three crises hit results in a decline of both the economy and the resource base. The solution is already happening: shifting to a "reconomy", which is based primarily on the renewal of all assets. This is as opposed to our dying "deconomy", which was based primarily on developing new built assets, on depleting natural assets, and on maintaining socioeconomic assets. The latter has been increasingly unsuccessful, due to the unsustainable nature of the two former activities.

In *The Restoration Economy* (and as described in the cover story of the October 2003 issue of *PM Network*) restorative development was grouped into eight categories of projects. Four are primarily in the realm of the natural environment: ecosystem restoration, watershed restoration, fishery restoration, and agricultural land restoration. Another four project categories focused primarily on the built environment: brownfields remediation and redevelopment, infrastructure renewal/replacement; historic structure restoration, and catastrophe recovery.

***re*Wealth!** (Cunningham, McGraw-Hill, 2008) added a third category of restorable socioeconomic assets: education, community services/security, healthcare,

and commerce. Together, these twelve categories comprise the key ingredients of community/regional revitalization.

But ingredients alone do not a cake make. A recipe is necessary, and there's the rub: until very recently, a reliable, proven recipe for revitalization (or regeneration, as it's referred to in the UK) hasn't existed. Managing each of those twelve categories of restorative projects is relatively straightforward, and many best practices have been defined. But managing an ongoing program of community or regional revitalization that includes *all* of those forms of renewal is another matter.

Therein awaits a huge opportunity. After all: what community doesn't want renewal? It's a universal goal. Even when a community is quite vibrant, folks always want more: more quality of life, more jobs, a healthier natural environment, better transportation, etc. Actually, the universal goal of intelligent, well-run communities is more specific than just renewal. What they want is *rapid, resilient renewal*.

They want renewal, and they want it now. The need for speed is partly driven by election cycles, partly by a need to garner public support, and partly by the need to inspire confidence in the community's future among redevelopers, investors, and employers. But they also want resilience; they want that renewal to last (rather than just a brief flash of revitalization from an isolated high-profile project like a convention center or sports stadium).

The universal goal of rapid, resilient renewal is the primary driver of the shift from project-based to program-based renewal. Achieving rapid, resilient renewal requires more than effective management of the component projects: it demands program management of the first caliber. That kind of program management, to be successful, requires a reliable recipe for revitalization: rules for decision-making, processes for creating solutions, and a model for organizing and funding it.

Rewealth is the most important and fundamental of the trends we're discussing here. But other trends are greatly magnifying the power of that renewal, and they directly relate to effective PM. Let's look at them now.

Trend #2:
From Silos to Integration

"Integration" refers to designing and managing projects and programs in a way that effectively addresses the natural, built, and socioeconomic environments together, as a whole.

The restoration trend has been a primary catalyst of this integration trend.

Take civil engineering, for example: For the past few centuries, civil engineering has largely been about the conquest of nature: constructing dams and levees, straightening rivers, and draining swamps. Now, the biggest trend in civil work is tearing down the dams, unstraightening the rivers, and refilling the swamps. Environmental restoration, in other words. Almost half the U.S. Army Corps of Engineers' budget is now restoration, and it's the fastest-growing portion of the budget. It would be growing even faster if so much of it didn't involve undoing their proud accomplishments of yesteryear: more retirements will be needed before the move to restoration hits full speed at the Corps.

There's a hitch, though. Civil engineering alone cannot undo the effects of civil engineering. Pure civil engineering is all one needs to kill an ecosystems (such as

by impeding or altering the flow of water). But civil engineering is only one of many disciplines needed to bring those same ecosystems back to life: it's seldom as simply as just turning the water back on. An entire new science of restoration ecology has emerged. One of the discipline's greatest challenges is working with engineers from the old school, where everything should be mechanical and predictable, and where they demand complete control.

Large-scale (such as regional) ecological restoration ups the ante further, requiring a plethora of "soft" issues to be addressed. The engineering work of previous centuries was usually driven by a single issue, such as draining wetlands for agriculture, or making rivers more navigable so the products of that agriculture could get to market. That land is now inhabited (often densely) by folks who can't be ignored or summarily displaced, as we did the indigenous peoples. Restoring those same wetlands now involves dealing with diverse social, economic, regulatory, and political issues.

Restoration usually involves stopping or altering human activity on the land. That's a far trickier proposition than simply getting a permit to initiate human activity, or to continue an activity (such as mining or lumbering) that's been done on that land for decades or centuries. This brings us to the next trend: stakeholder engagement.

Project and program managers who understand the vocabulary, tools, and dynamics of asset integration find themselves in great demand today. Tomorrow, they won't be able to get hired without competence in renewing the natural, built, and socioeconomic environments together. Doing so triggers efficiencies and synergies that can greatly magnify both the public and private return on investment. Not doing so risks damaging one of more of those environments; taking one or two steps back for every one forward.

Trend #3:
From Decree to Engagement

The push toward more integrated renewal is global, and affects virtually all disciplines. Urban redevelopers—especially when funded by public-private partnerships—must effectively address issues related to heritage, contamination, watershed, education, commerce, and all forms of infrastructure (water, power, transportation, sewer, etc.), just to name a few.

Long gone are the days of redevelopment based solely on knocking down and erecting buildings. Urban redevelopment program managers must now work with neighborhood groups, NGOs, planners, economic development agencies, schools, and a bevy of scientific disciplines, along with the usual cadre of engineers, architects, and contractors. The rewealth trend helped spawn the integration trend, which is—in turn—accelerating the stakeholder engagement trend.

Project and program managers who understand the vocabulary, tools, and dynamics of stakeholder engagement find themselves in great demand today. Tomorrow, they won't be able to get hired without being competent in effectively involving the business, academic, government, non-profit, and citizen realms. [A fifth category of "stakeholder" exists whose engagement is often crucial to success: the news media.]

Demanding engagement is much easier than doing it, of course. A model for efficient, effective engagement—the renewal engine—will be revealed momentarily.

Integration and engagement are two of the world's great challenges, and great trends. Maybe nowhere do we see the challenge more plainly than in China. Civil engineers dominate Chinese governance to a degree not seen in any other country. This makes the nation lean toward excessive control. Engineers hate uncertainty with a passion, and that's a fine trait when designing bridges and tunnels. But healthy human, economic, and wildlife systems are inherently complex, and thus unpredictable. Attempts at excessive control damages them; even kills them.

The engineering style of government also makes China lean towards doing projects in silos: look at the phenomenal levels of human suffering, and long-term damage done to their economy, their communities, and their natural resources by the Three Gorges Dam, which will be silted beyond usefulness in just a few decades. Lastly, government-by-engineers makes China lean towards management by decree: civil engineering as a discipline has a reputation for being quite poor at engaging other disciplines and stakeholders.

Dealing with a vast diversity of players requires tremendous people skills. All of this presents a huge opportunity for project managers. Someone has to tackle the opportunities posed by enhanced integration, increased stakeholder engagement, with the shift from "de" to "re," and—as we'll see momentarily—a greater dependence on partnering. PM—program managers in particular—is best positioned to take leadership in coordinating all of the people who are restoring our world for a living.

Trend #4:
From Flying Blind to Envisioning Renewal

Community revitalization and regional renewal processes usually bear a striking resemblance to voodoo, minus the dead chickens. Many highly-trained professionals from rigorous disciplines are usually involved. But what happens then they are all thrown together and asked to bring a dead or dying place back to life? The rigor disappears, replaced by blind faith that—if they all make good individual efforts—it will somehow result in neighborhoods or cities rising from the grave.

The reality is that most professionally-planned revitalization efforts in the past 50 years have failed, often miserably. Many have actually done grievous harm to their client communities. Detroit and Philadelphia are among many cities still trying to recover from the damage inflicted by earlier attempts at urban renewal. Unfortunately, the planning profession (like the architectural and medical professions) largely eschews forensic analysis, and resists providing prospective clients with effective ways to compare the track records of planning firms. It's near-impossible to ascertain actual success/failure rates, much less the causes of either. Thus, the same mistakes keep getting made.

Most heritage preservation groups (historic and natural) that have arisen in the past few decades did so to protect the community from their own government and/or planners. The planning profession is getting much better these days, and some truly wonderful ones most certainly exist. But the basic deficiency persists: a relative lack of rigor. There's been no real underlying theory, and few reliable, replicable "universal" processes upon which a community could base their revitalization. It's very much been a matter of doing lots of stuff, and hoping something magical results...more a matter of art and faith than science. All that being said, failures are often not the planners' fault.

A key factor in the poor track record of renewal efforts has been that communities tend to abuse their planners. A plan is how one executes a strategy. A strategy is how one executes a vision. But most communities don't bother to create a shared vision of their future, on which to base a strategy and a plan. Asking a planner to plan in the absence of a vision and strategy is asking them to work in a vacuum…to fly blind. The resulting plan is unlikely to succeed. If it does succeed by certain limited measures, that success is likely to make many people unhappy. And that will be the community's fault. It's not the planner's job to invent a vision for the citizens. That's like hiring someone to invent your life's dream…to determine your goals and passions.

Now, communities worldwide are taking more control of their destiny, and are recognizing the vital role that a shared renewal vision has in doing so. Professional visioning facilitators are now ubiquitous (not necessarily using that title). But, as they say at the Pentagon, a vision without resources is a hallucination.

Trend #5:
From Dewealth Defaults to Renewal Cultures (policymaking)

Despite the current economic woes wreaked by irresponsible (possibly criminal) lending practices, mushrooming oil prices, and war, there's no shortage of money in the world. Every community or nation that needs to be revitalized could be revitalized. One key is attracting investment, and the way to do that is to inspire confidence in their future.

Investors don't care much about current conditions: what they care about are future values. If they are convinced a community is coming back to life (or is about to), they will purchase and redevelop the most god-forsaken properties. What does it take to inspire such confidence? A shared vision is a great place to start: restorative investors and redevelopers prefer communities that know what they want, and that have a broad consensus on their path forward.

What really drives redevelopers crazy is being forced to jump through frustrating regulatory hoops and over code barriers to accomplish what the city says it wants. Redevelopers work on borrowed money, so delays are deadly. Why are so many communities difficult to redevelop? Because of vestigial incentives, regulations, and building codes that were designed for the old sprawl-based deconomy. Renovating a city's, region's, or nation's policy environment is a major factor in attracting and nurturing regeneration.

The goal is to create a renewal culture that attracts and nurtures rewealth. How best to do that? By embedding the three renewal rules—rewealth, integration, and engagement—into public policy. Making those rules the defaults for decisions affecting a community's future is the surest way to it on the path to revitalization. This doesn't mean that the community will never sprawl, never extract virgin resources, never operate in silos, or never make unilateral decisions. It just means that those will become the exceptions: they will no longer be the default modes of operation.

Trend #6:
From Going It Alone to Partnering

The most important of the three renewal processes is partnering. Partnering for renewal takes three basic forms: public-public, public-private, and private-private.

Such "renewal partnerships" now account for the vast majority of regeneration activity worldwide, especially in Europe and the Americas.

For the most part, only relatively small projects "go it alone" these days: virtually all billion-dollar-plus projects are partnerships, as are most 8-and-9-digit projects. The partnering trend has spawned a plethora of multi-billion-dollar restoration and redevelopment projects worldwide. The sheer size of these initiatives is increasing dependence on the PM profession, even without the additional challenges of integration and engagement.

Project and program managers who understand the vocabulary, tools, and dynamics of partnering find themselves in great demand today. Tomorrow, they probably won't be able to get an interview—much less hired—without such competence.

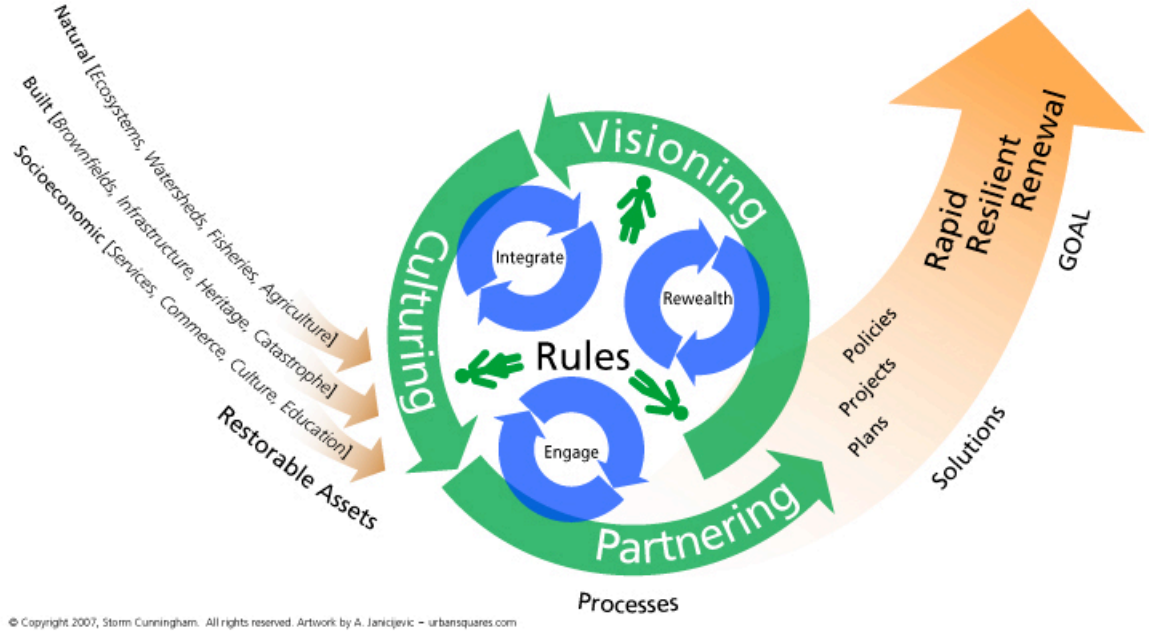
Trend #7:
From Project-based to Programmatic Revitalization Using Renewal Engines

The three rules and three processes all derive power from being based on existing trends. The world is already shifting rapidly from dewealth to rewealth. Integrated solutions are already in great demand, as are projects that effectively engage the stakeholders. Communities are already well-aware of the power of having a shared vision of their future, and they are quickly realizing the importance of creating a culture (policies, legislation, incentives, etc.) that supports that vision. Partnering is already the default mode for large renewal projects, since the public nor the private sectors alone seldom have all the necessary resources.

Given all that progress and activity, why is the world still in such rough shape? Why have problems that used to be strictly local gone global? Maybe the key factor is that global solutions—like global problems—are based on the actions of individuals, and people's actions are primarily based on decisions that affect their immediate environment. That is, their community.

Revitalize the world's communities—including their natural, built, and socioeconomic environments—and perform that revitalization in a way that engages and benefits all stakeholders, and you revitalize the world. So, what's needed is a replicable, scalable, universal model for organizing, funding, and sustaining rapid, resilient renewal. We now have that. It's called a renewal engine.

The creation of renewal engines is a trend-in-the-making. Renewal engines have been evolving independently in many cities around the world over the past two decades, but weren't recognized or documented until 2008, with the publication of ***re*Wealth!**. That formal recognition—that blueprint for forming successful renewal engines—means that the renewal engine model should soon join the three renewal rules and three renewal processes as *bona fide* global trends.



A renewal engine is a permanent, non-profit, public-private entity. The graphic above illustrates the essential workings of a renewal engine. The raw ingredients of renewal (restorable assets) feed into the engine, which has engaged all the stakeholders to create a shared vision of their renewed future.

The members of the renewal engine make decisions based on the three renewal rules, which makes high-level audits of their actions quick and easy. They work to imbed these rules into public policy, which produces legislation and incentives that attract and nurture redevelopment, thus creating a culture of renewal. Potential projects are analyzed by task forces comprising potential project partners. The visioning, culturing, and partnering processes produce solutions: plans, policies, and projects, which lead to the universal goal: rapid, resilient renewal.

The renewal engine model was pioneered in cities like Chattanooga and Bilbao, but—as mentioned earlier—has never before been documented. As a result, each city has had to invent theirs largely from scratch. ***re*Wealth!** identified the best features of these pioneering efforts to create a blueprint for an ideal renewal engine. With that "universal" model as a starting point, communities of almost any size, anywhere in the world can create their own—modified to their own customs and legal/financial/political environment—and start building their renewal capacity.

It's the contention of this author that ecological restorationists should become familiar with the process of creating and maintaining renewal engines. Doing so will help make their work integeral to efforts designed to accomplish what all of the local stakeholders cherish: rapid, resilient renewal of their natural, built, and socioeconomic environments.

Discussion

The shift to more integrated approaches for renewal projects takes the complexity inherent in restoration and magnifies it manifold. Restoring an ecosystem, remediating and redeveloping a large brownfield, or renovating a subway system are all complex enough, even when done as silo projects. Require the work to integrate with the renewal of all twelve asset sectors in the natural, built, and socioeconomic environments, and the complexity goes through the roof.

Add the need to engage all the government, academic, non-profit, business, and citizen stakeholders, and most professionals in any of the "re" disciplines will run in terror. Therein lies the challenge...and the opportunity to resolve many of the most pressing problems in the practice of ecological restoration: increasing its funding and other forms of support, and making that funding and support of a longer-term nature, so as to provide better monitoring, maintenance, and learning.

Conclusions

Of the seven trends documented here that are affecting ecological, integration and engagement are the two most important. They are the paths to more funding, longer-term funding, broader political and public support, greater access to knowledge and resources that are normally not readily available to restoration ecologists, and better technical restoration success in general. The other five trends—and related tools—provide ecological restoration projects with logical and practical approaches to becoming core components of community and regional socioeconomic regeneration.

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