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What the World Needs Now: A Bold Plan for New Standards

(Based on a Big Idea Capable of Lighting Creative Fires in the Imaginations of Millions)

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Standards, Measurement, and Markets

Sustainability and safety were not high priorities for many entrepreneurs at the birth of modern capitalism. Means and methods for harnessing the profit motive as a driver of economic prosperity became available on a mass scale in Europe and the United States in the early nineteenth century (Bernstein, 2004). Though often crudely focused on narrowly defined short term financial returns, the economic and technological advances made over the next century and a half brought longer and more comfortable lives to hundreds of millions of people.

The currency, measurement, product, and environmental standards developed, introduced, maintained, and improved during this time were essential to the gains made. These standards provided common languages for identifying commercial products and for comparing them quantitatively and qualitatively (Ashworth, 2004). The rigorous scientific status of many standards provided a sense of a shared history and vision of the future, both of which were needed for aligning and coordinating the investments of all stakeholders in any given industry (Miller & O'Leary, 2007).

But the gains of early capitalism were obtained in ways that were not aligned with the basic requirements of harmonious coexistence among peoples or with nature, and so were neither sustainable nor safe. Furthermore, in the wake of the last decade's ongoing economic upheavals, concerns with sustainability and safety have expanded beyond the environment to permeate and infuse every area of life, from business to finance to government to education to health care. As many have held for decades, the concepts and concerns of sustainability and safety must be properly rooted in scientifically maintained metrological standards and extended systematically into the management of natural, social, and human capital (Ekins, 1992; Ekins, Hillman, & Hutchison, 1992; Ekins, Simon, Deutsch, Folke, & DeGroot, 2003; Ekins & Voituriez, 2009; Hawken, Lovins, & Lovins, 1999).

Dysfunctional markets can be traced to excessively high transaction costs, information asymmetries, and institutional failures (Barber, 1987; Barzel, 1982; Benham & Benham, 2000; North, 1990), all of which prevent the coordination and alignment of investments that might otherwise harmonize productively in a whole greater than the sum of its parts. Metrological standards that effectively and efficiently facilitate the creation of markets are a part of the rules, roles, and relationships produced by skilled actors in institutions interested in making economic transactions possible (Miller & O'Leary, 2007, p. 710). Though the details of both the technical and social networks involved in achieving universal agreement based in metrological standards are well described (Bud & Cozzens, 1992; Callon, 2002; Latour, 1987, 2005; Wise, 1995), practical guidelines for their implementation are still in development (Fisher & Stenner, 2011c; Kjellberg & Helgesson, 2007; Miller & O'Leary, 2007).

Better Measurement and Better Markets for Human, Social, and Natural Capital

Nowhere are such guidelines more needed than in the domains of human, social, and natural capital. Safe, sustainable, and socially responsible business practices and economic policy demand that no major sectors of the economy be left up for grabs (Fisher, 2012). The major forms of capital measured and managed today (property and manufactured and liquid capital) in financial spreadsheets and economic models are estimated to constitute only about ten percent of the total volume of capital employed in productive enterprise (Hawken, et al., 1999, p. 5). The other ninety percent of the capital under management—the resources, living systems, and ecosystem services in nature; human abili-

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ties, motivations, and health; and the social sphere of trust, loyalty, and commitment—is absolutely essential to economic productivity but is not measured or managed with the same precision, accuracy, and meaningfulness.

This failure is in large part due to the widespread and mistaken idea that universally uniform measurement of these so-called "subjective" attributes is impossible. Thus, though it is widely said that "we manage what we measure," measurement is unfortunately often not well understood. Assigning numbers to observations as ratings or costs is often deemed sufficient even when superior, relevant, and accessible scientific methods of instrument calibration and standards development are left unnoticed and unexplored. This is the case with many substantively well-informed measurement efforts mounted in response to the needs for better measurement, such as the Sustainability Impact Assessments developed in response to the World Trade Organization's policies (Ekins & Voituriez, 2009), the proposals for genuine progress indicators (Anielski, 2007), or the United Nations Millennium Development Goals (IMF Staff, 2002). These efforts are weakened by methodological inefficiencies and flaws that have been overcome in both theory and practice for some time (Andrich, 1988, 2010; Bond & Fox, 2007; Fisher, 2009a, 2011a, 2011b; Rasch, 1960; Wilson, 2005; Wright, 1977, 1999).

The works cited, along with many others in the readily available literature, document the theory and practice of measurement needed for developing and deploying an Intangible Assets Metric System. The problem is less one of identifying solutions than it is one of situating them within the context that makes their advantages salient. The goal here, then, is to situate advanced measurement principles and the need to better manage our living capital resources relative to conditions identified as essential to high-growth economic environments. What if economic growth opportunities were created in the domains of improved quality of life, trustworthiness, and the conservation of nature? What if economic growth became contingent upon sustainable and safe policies in education, health care, social services, government, and human and environmental resource management? Though such proposals may sound outlandish and unrealistic, what if they are possible? Should we fail for lack of bold vision, or should we instead subject wild hypotheses to careful tests?

In opting for the latter, prudence advises the application of a preliminary screen. What were the historical conditions in which capitalist economic growth initially took root? Do they provide a basis for an analogy to contemporary conditions in which similar rates of growth might be cultivated in industries dominated by human, social, and natural capital? Bernstein (2004) suggests four such conditions:

1. Property rights: Those who might create new forms of value need to own the fruits of their labors.
2. Scientific rationalism: Innovation requires a particular set of conceptual tools and a moral environment in which change agents need not fear retribution.
3. Capital markets: Investors must be able to identify entrepreneurs and provide them with the funds they need to pursue their visions.
4. Transportation/communications: New products and the information needed to produce and market them must have efficient channels in which to move.

Considering human, social, and natural capital relative to this list of conditions conducive to environments capable of supporting broad scale economic growth, first and most glaring in its absence is property rights. Despite the long-proven measurability of reading ability, health status, and social cohesion, no one among us knows either how much literacy capital, health capital, or social capital they have in stock, or how much it is worth. We will not likely be able to take full individual or corporate responsibility for our shares of living capital stock until those shares are put on the books. For that to happen, the metrology of living capital needs to secure a new legal status in the form of statutory reference standards supported with practical means of traceability.

Second, there are deep disagreements in the social sciences on what properly scientific and rational intellectual tools would look like, and if a moral perspective on such tools is tenable. Much work in this area to date is uninformed about current scientific theory and practice, so considerable effort needs to be expended in sorting out the relevant issues. Positive potential in this regard is developing as principles emerge for organizing existing tools relative to the generality and meaningfulness of their results (Fisher, 2010; Fisher & Stenner, 2011a).

Third, investors are not yet attuned to opportunities in human, social, and natural capital markets, but could be alerted if suggestions to the National Institute of Standards and Technology and the National Science Foundation as to the viability of uniform metrics for these intangible assets are acted on (Fisher, 2009b; Fisher & Stenner, 2011b). The basic form of the needed capital markets is intact, though battered by recent events.

Fourth, transportation and communication networks make up the one condition that is satisfactorily met among the four.

In sum, demands for accountability in the domains of human, social, and natural capital appear to be converging with capacities for their improved measurement and with the communications networks needed for making new markets in education, health care, and other industries intensively invested in living capital. The condition falling furthest away from the needed status likely concerns property rights. Few are aware that intangible assets can be reliably and validly

measured, so almost no one conceives of having or owning a particular amount of literacy or health capital. An educational campaign targeting issues like this may be needed before much momentum in the needed direction can be generated.

Conclusion

All problems of human suffering, sociopolitical discontent, and environmental degradation are caused by waste (Hawken, et al., 1999, p. 59). Better measurement is needed for better management of human, social, and natural capital. Measures that uniformly and universally increase as happiness, social cohesion, and environmental quality increase could drive down transaction costs, improve information symmetries, and align institutions with broader social goals. An international program focused on researching and implementing the measures needed would provide an initial burst of initiative useful for educating relevant professional groups and the public at large as to a new array of economic potentials. However, the real potential for economic transformation would follow on the introduction of the Intangible Assets Metric System. Deployment of this system across financial, marketing, and quality improvement domains, mimicking the multifaceted uses of the existing metric *Systeme Internationale*, is where it would provide the market context in which purchasing decisions could be coordinated virtually by product information, in which demand could locate and obtain the most favorable value, in which research and quality improvement efforts could produce new value, and in which firms within an industry could anticipate customer expectations and product features far enough in advance to match them up in the market.

We need to understand quantitative measurement as having (1) a highly technical, scientific, experimental, and laboratory component in which constant unit amounts are mapped on number lines, and (2) a network of metrological connections traced between every instrument and the relevant reference standard defining the universally uniform unit of measurement. When the variables of the human sciences are effectively quantified in these terms, then psychological, social, and environmental quality of life will be made available for humanity's self-empowerment and self-knowledge in ways never before imagined. Those who understand and act on this insight earliest will be the leaders of a new scientific and cultural revolution. Crosby (Crosby, 1997, p. x) shows that the unity of mathematics and measurement in a quantitative model of the natural world explains why, between 1250 and 1600, Europeans "were able to organize large collections of people and capital and to exploit physical reality for useful knowledge and for power more efficiently than any other people of the time." It can be reasonably expected that the similar unification of mathematics and measurement in a quantitative model of the psychosocial world also will enable new magnitudes of efficiency and effectiveness to be achieved in caring human relations.

The economic value of systems for better measuring and managing human, social, and natural capital will be proportionate with the efficiencies realized and the waste reduced. The National Institute of Standards and Technology (NIST) of the US Department of Commerce estimated the economic impact of 12 areas of research in metrology, in four broad areas including semiconductors, electrical calibration and testing, optical industries, and computer systems (NIST Subcommittee on Research, 1996, Appendix C). The median rate of return in these 12 areas was 147 percent, and returns ranged from 41 to 428 percent. The report notes that these results compare favorably with those obtained in similar studies of return rates from other public and private research and development efforts. Even if intangible assets metrology produces only a small fraction of the return rate produced in physical metrology, its economic impact would still have transformational power.

This is so, even though there are few topics as thoroughly taken for granted and assumed boring as metrology. Schaffer (1992, pp. 23–24) observed that

> Metrology has not often been granted much historical significance. But in milieux such as those of Victorian Britain the propagation of standards and values was the means through which physicists reckoned they could link their work with technical and economic projects elsewhere in their society. Instrumental ensembles let these workers embody the values which mattered to their culture in their laboratory routines. Intellectualist condescension distracts our attention from these everyday practices, from their technical staff, and from the work which makes results count outside laboratory walls.

The propagation of standards and values is today a means through which psychologists, sociologists, educators, health care researchers, and environmental quality researchers might reckon they could link their work with technical and economic projects elsewhere in their society. Properly configured instrumental ensembles could let these workers embody values in their laboratory routines that matter in their culture. We can no longer afford the intellectualist condescension of the past that has distracted us from these mundane practices, the technicians who perform them, and the work that makes research results meaningful in the wider world. On the contrary, we are in great need of leaders capable of formulating bold plans for economic revitalization from these complex but big ideas. We need visionaries capable of putting our larger futures into perspective, and who have the charismatic ability to tell the human story anew. When this is done—and it will be, somewhere, somehow, by someone—the creative fires of millions of imaginations will be lit, and a new entrepreneurial spirit will arise.

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