

DRAFT PAPER FOR PUBLICATION:

The Compass Index of Sustainability: A Five-Year Review

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Abstract

The Compass Index of Sustainability is a method for clustering, aggregating, and scaling indicators and evaluation results on an absolute 0-100 performance scale, where "0" is set equal to worst-case or system-collapse conditions, and "100" is set to ideal or perfect long-term sustainable conditions. The method was created in 1997 and implemented for the first time in 2000, initially at the regional/community scale. This paper reviews five years of experience in using the method (in whole or in part) in a variety of contexts and sectors, ranging from small communities to larger regions, and from small companies targeted for private investment to large, global, publicly traded companies. It examines the factors leading to success or failure in the application of the method by looking at case studies, two each in the public and private sector. It also makes some observations about the use of aggregated indices in sustainable development generally.

In June of 2000, in the city of Orlando, Florida, USA, we presented the first example of a new methodology for clustering, aggregating, and scaling indicators of sustainability. Called the "Compass Index," the method was built on interpretations of theoretical work in sustainability by Herman Daly, Donella Meadows and others. Its purpose was to (1) simplify and visualize a complex indicator set in ways that decision-makers, the media, and the general public could readily understand; and (2) put sustainability performance assessment on an absolute, rather than relative, performance scale, so that progress is being measured and assessed against the required conditions for sustainability instead of against the performance of other cities, companies, or other actors. The methodology, and our first experience of working with it, was documented in the *Journal of Environmental Assessment Policy and Management* (AtKisson et al., 2001).

Since then, the Compass Index has been applied — in whole or in part — to a variety of cities, regions, and communities, as well as to large corporations and to smaller, fast-growing companies targeted for investment. It has also been integrated into a larger process for strategic planning and training in sustainable development. This paper reviews our experience to date with the method: its strengths, problems, and impacts. It first reviews the methodology, then summarizes the current applications, before going into a discussion of lessons learned and next steps in the method's development.

THE COMPASS INDEX METHOD: THREE INNOVATIONS

We begin with four clustering categories, which borrow the symbolism as well as the initial letters of the English-language compass: North, South, East, West. *Nature, Economy, Society, Well-Being*.

These four categories were introduced by economist Herman Daly (and later reinterpreted by systems scientist Donella H. Meadows) as a way of conceptualizing key factors in a sustainable society, and the relationship between means and ends. Daly framed these four elements -- Nature, Economy, Society, and individual human Well-Being -- as different hierarchical levels in a triangle ("Daly's Triangle"). Nature is the "ultimate means," the source of all energy and resources. The Economy, the "intermediate means," converts nature into usable goods and services. This in turn supports the institutional arrangements and collective human patterns we call Society, which are the "intermediate ends." The "ultimate ends" are human health, satisfaction, and happiness. (Meadows, 1998)

Our first innovation was to map the same four categories onto the compass, taking advantage of the serendipitous alignment of initial letters (N, E, S, W) as well as the compass's circular form. These categories became the clustering framework for our indicator sets. (Figure 1)

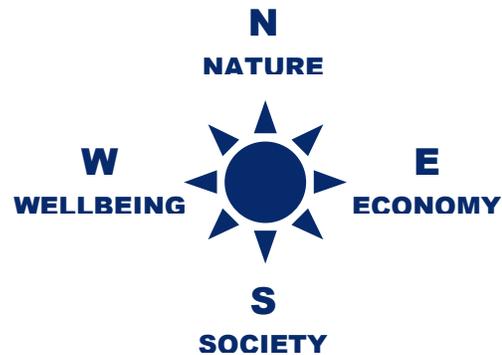


Figure 1: Basic categories of the "Compass of Sustainability." Image © AtKisson, Inc.

This modification of the "Daly Triangle" accomplished three things:

- (1) The move from "Triangle" to "Compass" removed the means-to-ends hierarchy, which participating experts in a variety of international meetings on indicators had judged to be controversial and not amenable to differences in cultural perspective. The circular compass form emphasizes equal importance of the dynamics among the four clusters, at least for sustainability assessment.
- (2) The Compass emphasized the system linkages among the four cluster areas (and the specific elements contained within them). For example, it is not the case that natural systems interact with human health and well-being only through the intermediaries of the economy and social institutions. The connections among all four "Compass Points" are direct and often complex, and the circular Compass format also makes this easier to model.
- (3) Finally, the *image* of the Compass supported the *metaphor* of the compass: orienting oneself, finding one's direction, knowing where to go. This metaphor worked particularly

well with indicator systems designed to engage multi-stakeholder or multi-disciplinary groups who are seeking consensus on common objectives.

We had previously worked extensively on the process elements of indicator development (AtKisson, 1999), and in defining quality guidelines for such processes (Hardi et al., 1997). These we incorporated as the process elements in the Compass Index method.

Our second innovation was to aggregate and scale the indicators based on absolute performance criteria for sustainability. To make the interpretation of the aggregated indicators intuitive and familiar-feeling, we chose a 0-100 scale for representing sustainability performance, where "0" equals "systemic collapse conditions," and "100" equals "perfect performance and/or ideal sustainability conditions." Conversion of raw trend data to this performance scale requires the consideration of relevant scientific, historical, and/or normative standards (including those set by policy). Such conversion is hardly non-controversial, but reasonable judgments can be made and defended. Three illustrations of this method in practice:

- Data on *energy consumption* has been scaled with "100% renewable" as the top or "100" end of the scale, and emission levels (including CO₂ emissions) that were judged life-threatening or otherwise "very dangerous" at the bottom or "0" end of the scale. Setting the "0" end of the scale has often been guided, for example, by the current consensus of the Intergovernmental Panel on Climate Change.
- Data on *infant mortality and low birthweight* has been scaled based on national policy goals on the top end (with the understanding that biology limits how low the incidence of these problems can be driven), and with current worst-case figures in zones of extreme domestic poverty at the bottom end.
- Data on *unemployment* has set 3% equal to the "100" level of ideal performance, since there is general consensus among economists that 2-3% unemployment is equivalent to "full" employment (allowing for desirable mobility between jobs). The "0" level has been set equal to levels reached during times of severe economic depression.

The method also takes into account the need to adjust the scales so that they make sense to the average person. For example, if the air looks visibly smoggy, but the performance scale suggests that air quality is "almost sustainable", obviously the performance scale is not going to have credibility, especially with environmental activists.

The third innovation, relative to other sustainability assessment structures, is the specific inclusion of individual "Well-Being" dimension. This innovation is actually derived directly from our adoption of Daly's framework, so it is not original to our method. It results, however, in a significant and innovative difference from other frameworks, which usually concentrate on social and institutional issues, but not on the individual. The component elements of the Well-Being dimension generally include individual health and

longevity measures that are often categorized under "Social," but it also includes more subjective factors such as experienced quality of life, fulfillment of educational potential, and a sensitivity to aesthetics. We believe the inclusion of these factors more accurately reflects features of an overall system that most people want to sustain, in addition to natural systems health, economic vitality, and social cohesion.

The results or products of using this method are:

(1) *A basic disaggregated, comprehensive, sustainability indicator report*, using the Compass categories as clustering categories.

SUMMARY OF INDICATOR PERFORMANCE BY LEVEL OF DANGER/SUSTAINABILITY		
<i>"Informal Confidence Estimate" based on data availability and resulting ability to assess recent trends.</i>		
"SUSTAINABLE" – INDICATORS CURRENTLY IN GREEN (80-100)		
Indicator	3-Year Trend	Informal Confidence Estimate
General Health (Heart Disease)	UP 3.5	80%
Mental Health (Suicide)	No Change	90%
Unemployment	DOWN 8.7	90%
"FAIR" – INDICATORS CURRENTLY IN YELLOW/GREEN (61-80)		
Toxic Emissions	UP 14	40%
Air Quality	UP 8	100%
Land Consumption	UP 3	40%
Housing Affordability	UP 3	70%
Living Costs	UP 2	70%
Wages	UP 1	90%
Poverty	DOWN 0.3	80%
Mobility	DOWN 1	70%
Crime	DOWN 2	70%
Internet Access	DOWN 2	70%
High School Graduate Rates	DOWN 4	70%
Stream Quality	DOWN 5	60%
"STRONG CAUTION" – INDICATORS CURRENTLY IN THE YELLOW (41-60)		
Infant Health	UP 6	90%
Voting	UP 3	100%
Environmental Ethic	DOWN 7	80%
Access to Health Care	DOWN 19	60%
"DANGEROUS" – INDICATORS CURRENTLY IN THE RED/YELLOW (21-40)		
[No indicators in this category]		
"VERY DANGEROUS" – INDICATORS CURRENTLY IN THE RED (Scoring 0-20)		
Energy	UP 3	80%
Equity of Political Represent.	No Change	100%
Native Species	DOWN 1	70%
Racial Equity	DOWN 7	80%
Recycling	DOWN 8	80%
INDICATORS NOT INDEXED FOR LACK OF DATA		
Regional Cooperation		
Social Capital		
OVERALL INFORMAL CONFIDENCE ESTIMATE*		77%

Figure 2. Performance chart from 2004 Regional Indicators Report for Southwestern Pennsylvania, USA. Source: Sustainable Pittsburgh

(2) *Comparable performance assessment for individual indicators.* These performance indicators are fit to a common 0-100 scale, using similar sustainability-related criteria, and therefore reasonably comparable in terms of which trends should receive priority attention. These results also show change in performance over time, allowing for comparisons among indicators regarding which trends are getting "better" or "worse", and at what rate of change. (See Figure 2.)

(3) *Aggregated performance indices by "Compass Point"*, showing the average sustainability performance level and trend for all the indicators in Nature, Economy, Society and Wellbeing. (See Figure 3.)

(4) An *"Overall Sustainability Index,"* which is a super-aggregate of the four Compass Point subindices and shows whether, on average, the performance of the entire indicator set is improving or worsening over time, and at what level of "sustainable performance" the whole system in question can be judged to be. (See Figure 4.)

A simple average is used to construct the performance indices in order to keep the method understandable to the average person and as transparent as possible, as well as to avoid irresolvable debates on appropriate weighting of individual factors. Note, however, that inclusion or non-inclusion of an indicator is already a fundamental weighting choice, as is the scaling method chosen to evaluate its performance.

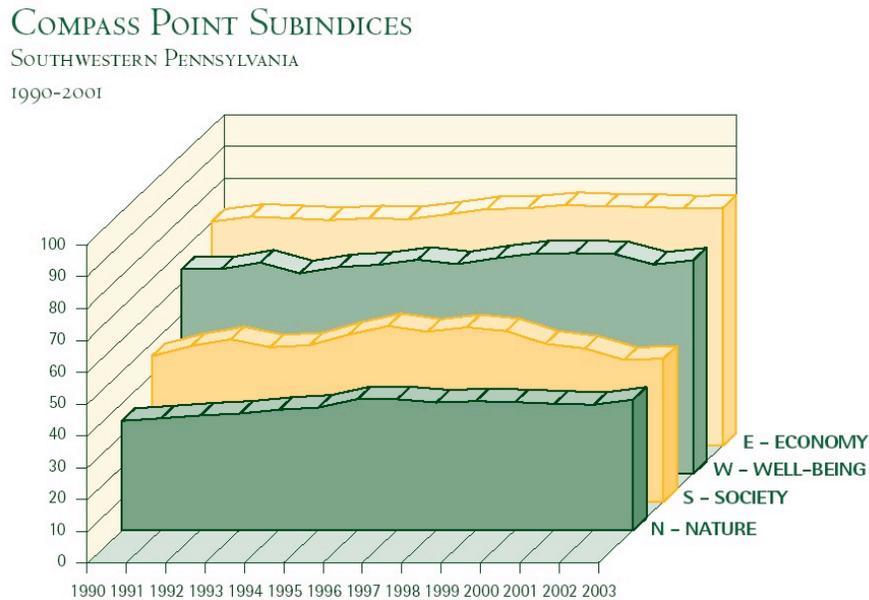


Figure 3. Presentation example of the Compass Point subindices. Source: Sustainable Pittsburgh



Figure 4. Presentation example of the Compass Index including superaggregated Overall Sustainable Index (center). Source: Sustainable Pittsburgh

APPLICATIONS OF THE METHOD IN PRACTICE

The Compass Index was first developed as tool for interpreting and presenting sustainability indicators for (1) a geographic area, such as a city, community, or region. Several such examples have now been fully developed and implemented, with varying degrees of methodological complexity and data availability (as noted below). However, since its initial development, the Compass Index method has been applied in several other contexts, including (2) assessing small to medium sized enterprises for their current sustainability performance and future potential (to support investor decision-making); (3) assessing large corporations for their publicly declared policies and measures of progress regarding sustainability; and (4) supporting training and planning workshops to quickly develop estimates of performance trends as a basis for systems analysis and change efforts.

Table 1 summarizes all known applications of the Compass method, and which aspects of the method have been used (in some cases adoption of the method has been partial). We class these applications in four categories: (1) Geographic, (2) Investment-related, (3) Corporate, and (4) Workshop-related. "Full implementation" means that the Compass Index has served as the clustering, aggregating, scaling, and presentation framework, as well as a group process tool for structuring meetings and workshops.

Table 1: Known Applications of the Compass Index Method in Practice

Source: AtKisson, Inc.

<i>Name, Location of Project</i>	<i>Category</i>	<i>Aspects Used</i>	<i>Description and Notes</i>	<i>Most Recent Activity</i>
Healthy Community Initiative, "Legacy" series, Orlando, USA	Geographic	Full implementation	County-scale sustainability report. The Compass also provides the organizing structure for awards recognizing "Champions of Sustainability"	2002 report, 2004 awards event (first published 2000)
Nantucket Sustainable Development Corp., Nantucket, USA	Geographic	Partial: Framing, clustering, not indexing	Community sustainability report complete, chose not to take additional step of performance indexing for data and budget reasons	2003, report
Angels with Attitude, LLC, Seattle, USA	Investment	Full implementation	Venture capital fund using the "Compass Index for Investors" to evaluate target companies	2004
Baltic 21, Northern Europe / Baltic Sea Region	Workshop	Partial: Use of Compass to cluster and assess published indicators in a strategic planning workshop	The Compass was used as an overlay on a completed indicator set to structure a systemic review of trends as part of a strategic planning process focused on the eleven nations around the Baltic Sea	2004
Compass Assessment Survey 2004	Corporate	Full implementation	Internal study of top-rated sustainability-reporting companies, using a new variation on the Compass methodology. Not publicly released	2004
State of South Australia	Geographic, Workshop	Partial, not publicly credited: Indicator selection, and evaluation in a closed workshop environment	The Compass format was used in the internal process of framing and selecting indicators to support the State's strategic plan, but different terminology was used in the published version. The Compass indexing method was used to evaluate the indicators in a planning workshop that addressed greenhouse gas emission reduction initiatives.	2004 report, workshop
[Global corporation], USA	Corporate	Partial: Indexing method and performance scale	For a large corporation, we adapted the Compass Index methodology to another presentation model (the "Sustainability Decathlon")	2004, methodology development and data gathering

<i>Name, Location of Project</i>	<i>Category</i>	<i>Aspects Used</i>	<i>Description and Notes</i>	<i>Most Recent Activity</i>
Japan for Sustainability	Geographic	Full implementation	NGO-based project to develop a set of comprehensive sustainability indicators for Japan, using the Compass Index frame and method	2005, publication
Fort Carson/Colorado Springs, USA	Geographic	Partial: Compass categories and clustering	This U.S. Army base, in collaboration with its surrounding community, is using Compass to frame indicators and dimensions of sustainability, but not yet for indexing or scaling indicators	2004, workshops and meetings
Sustainable Pittsburgh, USA	Geographic	Full implementation	Region-scale sustainability report. The performance index is treated as an "Appendix" to the bi-annual regional indicators report	2005 report (first published 2002)
Top 10 by 2010, New Orleans, USA	Geographic	Full implementation	Region-scale sustainability report. The performance index has never been released publicly, but was reviewed by participating decision makers	2005 update (first published 2003)

HOW THE METHOD HAS FARED IN PRACTICE: CASE STUDIES

When the Compass Index was first developed and published (in July of 2000), as the core of the Healthy Community Initiative of Greater Orlando's "Legacy 2000" sustainability report, it received significant local and indeed some national media attention. The report was released first in Washington, DC, USA at an event held at the National Press Club, and the public service cable television service C-SPAN covered the release. The next day it was released in Orlando, where it led the news on all major channels and received front-page attention. (See AtKisson, et. al., 2001)

In terms of public attention to the full methodology of the Compass Index, the first Orlando report represents the high water mark. While other projects and reports have received significant press attention, no project has managed to generate the considerable buzz that surrounded "Legacy 2000." Just two years later, when the Orlando report was updated, revised, and re-released (HCI, 2002), the newspapers and other media were actively avoided by project leaders: it was believed that because of changes in media ownership and political climate, both the newspaper and television media would be more hostile to the "Legacy 2002" report. Instead, a quieter strategy of one-on-one meetings with key leaders in the region was pursued, to good effect.

These two episodes in the Orlando story are instructive, in that they highlight a key reflection on the use of the method. In 2000, the Compass Index itself was interesting to the media, and it was useful to gain their attention and the attention of the public, thereby gaining the attention of political and other leaders. But in 2002, the performance index had less perceived value, because the opportunities for using it in the media were curtailed. The quieter "executive briefing" led to greater emphasis on the summary qualitative findings about key trends and how they were linked together in systemic ways.

The following case studies therefore focus on the Compass process as a whole, not just the performance index, which has had variable prominence and perceived utility, depending entirely on the context of the method's use. We now attempt to identify the factors that led to the method's success or failure in application, looking at four cases where the implementation has been full and complete (with one exception, as noted). Two of the cases are multi-sectoral regional development projects; one is a global business; and one is a venture capital investment fund.

Case 1: Sustainable Pittsburgh, Southwestern Pennsylvania, USA

In 1998, our firm was engaged to help design and launch a civic initiative in the Pittsburgh region of Pennsylvania, USA, in connection with a visit by the U.S. President's Council on Sustainable Development. The process brought together over a 100 leaders from that region, and they created a consensus statement on regional sustainability goals. The goals framed the development of indicators to measure the region's progress toward those goals.

Local researchers prepared a draft indicator report, and our firm was engaged to expand and improve upon it. We proceeded to reformulate the report according to the Compass Index method, in both process and technical terms. This involved:

- Framing the existing document as a "consultation draft," and holding a series of meetings with existing regional leadership groups to get feedback on the choice of indicators and their method of presentation.
- Expanding the indicators based on that community input, as well as additional technical input from regional experts.
- Preparing and publishing the resulting report, with the Compass as its clustering framework and with the Compass Index as a supplemental interpretation and analysis tool.

Whereas the Orlando, Florida Compass Index report had presented the aggregated Compass Index prominently — including using the resulting overall index score as a way to attract media attention — the steering group in Pittsburgh opted for an entirely

different strategy. The report was summarized in more traditional, "Executive Summary" terms, and the aggregated and scaled Compass Index was published as an Appendix.

Assessment of Success and Impact: The "Regional Indicators Report for Southwestern Pennsylvania" has now been published twice, and its impact appears to be growing. It has been used as a reference tool for strategic planning by a variety of local groups and actors.

The report has been used to (1) frame strategic action priorities for the sponsoring Sustainable Pittsburgh initiative, (2) provide formal feedback to the strategic planning processes of leading regional foundations, and (3) provide the basis for regional planning workshops on addressing linked chronic problems like sprawl and inner-city poverty. The Compass format has been generally accepted as a useful clustering framework; however, the Compass Index has not attracted significant attention. The impact of the Index is indirect: results are used "behind the scenes" as an analysis tool by the report writers, who then use those results to select and highlight the indicators and trends requiring urgent attention. That information is then presented in traditional Executive Summary text format.

Factors Affecting Success and Impact: The key factors affecting success here are a relatively conservative and polarized local political culture, and a skeptical expert group unwilling to fully endorse definitions of sustainability and unsustainability in indicator performance.

The Compass-based clustering format was non-controversial and generally accepted without comment. The placement of the Compass Index as an appendix was the result of expert skepticism regarding the indexing methods; an advisory group found it difficult to come to consensus on where to set the performance scales of individual indicators, and several participants worried that they could be attacked by conservative critics on methodological grounds. To avoid this risk, my firm, as the consulting organization preparing the report, offered to make independent decisions, and to present the results as an "experiment." This made the Index available for use as a strategic reflection tool, even though it was not highlighted in presentations to the public.

Case 2: Top 10 by 2010, New Orleans, USA

The "Top 10 by 2010" initiative is a multi-stakeholder project with joint sponsorship from a wide variety of business, foundation, non-profit, and local government actors in the region of Southeast Louisiana. The region covers ten counties (called "parishes") situated around the delta region of the Mississippi River. The initiative was intended as a ten-year push for regional advancement, with the goal making the New Orleans region "one of the ten best places to live and work in the United States." The co-chairs of the project were well-known real-estate developers, one from a prominent Democratic family, the other a conservative Republican who had formerly served in political office.

The Compass method provided the framework for the opening stages of this initiative, serving both as an organizing symbol (drawing people together from every Compass point, in both geographic and sectoral terms), and as the methodological frame for the development of long-term regional indicators. To emphasize the symbolism, the Compass was integrated into the logo of the initiative, and key chains with actual compasses were distributed to all participants.

As the first step in developing regional strategic goals and indicators, we surveyed 2,600 citizens from around the region (this number was required in order to get a statistically valid sample in each of the ten parishes). We asked them to name strengths and weaknesses in their communities, both now and in their imagined future, ten years from now. We then analyzed their free-form answers, which were recorded by the survey-takers in each citizen's own words, to identify key phrases and issues. These were then presented to a "Civic Panel" of one hundred regional leaders, and sixty "Technical Advisors." A nine-month process of facilitated meetings with both groups, both separately and together, coupled with a decision-process involving about twenty-five leaders on a Steering Committee, produced a relatively robust consensus on a set of forty-five indicators, spread among the four Compass Points.

These indicators were researched, and the resulting report was disseminated throughout the region and written up in the regional press. A separate report interpreting the indicators on the aggregated Compass Index performance scale was also produced in draft form, but this report was only circulated to the Steering Committee, Civil Panel, and Technical Experts.

The theory of change motivating the use of sustainability indicators produced by this format and using the Compass Index format rested on three key assumptions:

- (1) That one of the region's key problems was a lack of regional cooperation, and that the development of common regional indicators would help to build regional identity and new patterns of regional collaboration.
- (2) That focusing on regional improvement through a highly integrated sustainable development lens would help improve the externally perceived economic vitality and quality of life in the region.
- (3) That the indicators would serve effectively as a base and common point of reference for multi-sectoral, region-wide initiatives.

At the time of writing, it is difficult to assess the success of this project. The catastrophe that occurred in the region because of Hurricane Katrina has changed everything, and while regional leaders have signaled that they expect the indicators to be useful in guiding reconstruction, it is impossible to say what that will mean in practice.

But the impact prior to the hurricane appears to have been positive. Just prior to Katrina, we had updated the region's indicators. Some indicators showed significant improvement

in regional conditions, and one indicator suggested that the region was moving rapidly toward its goal of being perceived as a "Top Ten" city. This indicator, the region's placement on the Forbes/Milken list of "Best Places to Do Business in the United States," showed a jump from number 194 in 2002 to number 110 in 2004 -- an improvement of 84 places, and nearly halfway to the goal.

However, the extent to which these improvements can be credited to the indicator project is unknown. We do know that the project had a number of important impacts on regional planning and economic development strategy, that may have been quite crucial to other, parallel regional improvement processes. Also, the fact that the Top 10 by 2010 Steering Committee, after a nearly two-year period of dormancy, had re-engaged our firm to update the indicators with most-recent data suggests that the project was considered a valuable strategic tool for use by regional development leaders.

Assessment of Success and Impact: The Top 10 by 2010 Regional Indicators have been used to frame the strategies of regional foundations as well as to inform the new economic development strategy of the region's leading business alliance. The Compass Index performance scale has been part of that process, in entirely non-public ways. To that extent, the initiative can be called successful and to have had significant impact.

However, in terms of the project's stated goals for fostering regional collaboration and performance improvement, judgment must at best be withheld. Conditions for meeting those goals and declaring overall success within the originally envisioned time frame must eventually be re-evaluated in the context of Hurricane Katrina.

Factors Affecting Success and Impact: This project was framed as the launch of a 10-year initiative, with strong public declarations of commitment being made by its leaders. In practice, however, political and other events overwhelmed the capacity of project leadership to attend to this initiative consistently. A mayoral election, coupled with a major overhaul of the board, executive leadership, and public identity of the sponsoring organization (formerly the New Orleans Regional Chamber of Commerce, now known as "Greater New Orleans Inc."), created extreme political turbulence and consumed the time of many key project leaders. During this period, the Top 10 by 2010 project director became the Acting President of the sponsoring organization, and her new duties severely limited the time she could devote to implementation of the Top 10 process. At the same time, one of the Chairs became caught up in public controversies regarding his company's business development projects in the city of New Orleans. Also, a local business reporter strongly attacked the process (and myself, as the lead consultant) on political grounds, partly in conjunction with the other organizational changes that were happening; and this slowed work for a time. Funding for the process dried up during this period as well, as focus shifted elsewhere; and uncertainty about where the project was to be housed over the long-term contributed as well.

In sum, the initiative was beset by challenges. And yet the Compass approach was credited by many local actors as having created new relationships, changed regional

expectations, and raised levels of awareness regarding key trends that have been very important to strategic planning and decision-making in various contexts.

To cite one very poignant example, issues like accelerating coastal erosion and vulnerability to flooding were not on the "radar screen" of local business leaders; after the Top 10 by 2010 process, environmental actors were participating in regional business development strategy, and conservative business leaders were at least talking privately about the risk of flooding. (Unfortunately, this increase in awareness and engagement came far too late to affect the political decisions that ultimately left the city unprotected from Hurricane Katrina.)

Similarly, cultural groups, who manage one of the regions key economic assets (New Orleans is the birthplace of jazz among other distinctions), had never been formally engaged in regional economic processes until the Top 10 initiative brought them into direct dialog with leaders in that context. We were surprised to learn that even basic economic data -- such as levels of venture capital investment or patent production -- had not been researched prior to the Top 10 indicators process; and these were now included the strategic planning processes of local business development strategists.

Finally, perhaps the most important piece of information to emerge from the Top 10 process was the finding, at the earliest stages of surveying regional citizens, that they had extreme difficulty imagining a changed or better future (by comparison with, say, citizens of northern California, whom one of our associates had previously surveyed). This finding strongly affected the thinking of regional strategy leaders and encouraged them to promote a greater sense of vision and optimism about the region's future.

Case 3: Angels with Attitude I, LLC, Seattle, USA

In 2001 we were approached by a newly-created venture capital investment fund whose investment strategy including selecting companies with high sustainability performance. They invited us to create a company assessment tool using the Compass Index method but adapted to the needs of early equity investors and small, fast-growing companies. The intent of the tool was to provide the investment group with much more extensive analysis of a companies targeted for investment than the information provided by the usual "due diligence" process. This sustainability analysis was expected to help investors pick "future winners" with greater accuracy, on the theory that companies with relatively high sustainability performance now (as well the potential for high future performance) were more likely to succeed in the emerging marketplace and provide greater exit returns for the venture investor.

We developed a tool called "the Compass Index for Investors" that extensively evaluated companies in terms of the four Compass Point categories. The tool covers one hundred parameters, twenty per Compass Point, and incorporates traditional economic/financial and other due diligence-related assessments. It also assesses twenty overarching parameters in the category of "Integration," having to do with how well the company

plans and manages in a systemic way, taking all areas of sustainable performance into account and seeking linkages and synergies among them. The assessment parameters were also harmonized to other leading sustainability and assessment frameworks, including the Global Reporting Initiative, the Dow Jones Sustainability Index, the so-called "System Conditions" promoted by The Natural Step. The tool was peer-reviewed by a group of experts in the field of sustainable investing, through a project coordinated by a Harvard Business School MBA student.

In practice, the method involves an extensive review of company documents, survey feedback from senior managers, and interviews. Where actual data is not available — as is often the case with small companies — the evaluator uses technical and sustainability-related experience to estimate the relevant performance score based on the information that is provided. The quality and reliability of information affects the performance score as well; and the method adjusts for the relevance of particular parameters to that company. It generally takes an experienced evaluator approximately three days to review materials and complete an evaluation. Compass Index scores and interpretive evaluations are then presented to the investment group, and a set of 10-15 "Investment Performance Indicators" are selected from the assessment parameters provide both the company and investment group with a simplified way of tracking progress in the short term. The overall results are presented using the same 0-100 performance score, with subindex scores on the same scale for the four Compass Points, plus the "Integration" dimension. (See Figure 5.)

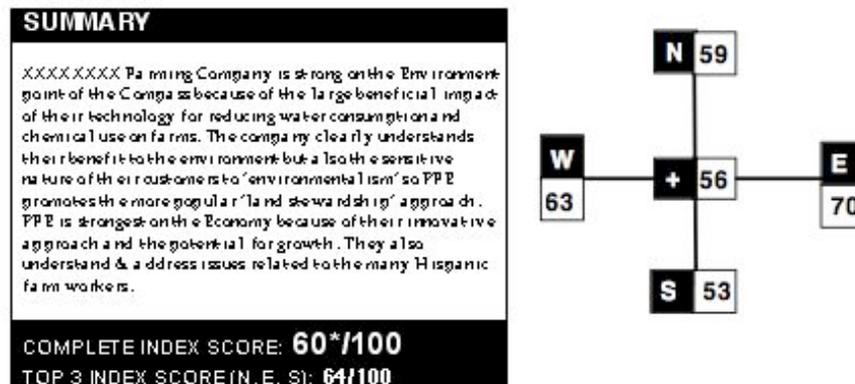


Figure 5. Presentation example of the Compass Index for Investors, with "Integration and Synergy" score in the center, represented by a "+". Source: AtKisson, Inc., for Angels with Attitude I, LLC.

The Angels with Attitude I fund is now fully invested, and we have reviewed nine companies using the Compass Index tool. The fund manager, Kristin Martinez, has declared the assessment process a success, though in application, the process was not without challenges. For example, assessments were supposed to be completed prior to investment decision-making; in practice, the full assessment has often been completed only after a decision to invest had been made. Market factors have driven faster investment decisions, while data limitations and slow information flow from companies has lengthened the period required to complete an assessment.

Assessment of Success and Impact: Part of the intent of the sustainability assessment process was to sensitive emerging companies to sustainability performance criteria, and to motivate them to integrate sustainability into their strategic planning and development much earlier in their growth. The assessment has definitely accomplished this goal.

Fund manager Kristin Martinez writes:

It was sometimes awkward to talk to company founders and managers about focusing on improving their sustainability scores when all of their other investors were only talking to them about improving sales, gross margins, and cash burn. It was difficult to be the only one asking about why there weren't any women engineers in the factory, or plans to offer paid time off to employees who volunteered in the community.

It was worth it, though, when management teams who hadn't known the term "sustainability" when we invested, pointed with pride to significant reductions in energy use or the creation of viable alternatives to toxic materials that had been caused by their products and services. (Martinez, 2004)

What we cannot yet assess, however, is whether the assessment has helped to pick winning companies in pure market terms, as none of the companies in the portfolio has yet matured to the point of being sold or publicly traded.

Factors Affecting Success and Impact: The success of this approach depending on three key factors: (1) the commitment of the investment fund and its manager to a sustainability-based strategy and sustainability assessment (and our commitment to them); (2) the direct linking of that assessment process to the investment process; and (3) the engagement of a very experienced evaluator.

From the outset, we viewed the sustainability assessment process and our business relationship with the investors as a long-term process, and our contractual relationship reflected that. Companies seeking capital from Angels with Attitude I were required to participate in the assessment as a condition for receiving the equity investment, and their investment agreements reflected that condition. Finally, our lead evaluator had nearly thirty years of cumulative experience in engineering, business management, and sustainability issues; this made it possible to conduct credible evaluations on limited information in a reasonable period of time.

Case 4: A Global Corporation

Confidentiality agreements prohibit us from revealing certain details of this case, but we are permitted to describe it in general terms.

We were engaged to support the indicator and index development of a major corporation based in the United States. In this case, their interest was in the aggregation, weighting, and scaling methodology of the Compass Index, but not in the Compass symbol itself or its clustering categories. Instead, we developed a sports metaphor that was more appropriate to the company's culture, and developed the specifications for a "sustainability decathlon," consisting of ten subindex categories for aggregating and scaling their performance indicators. Five indices were grouped under the general heading of "Environmental" and five under "Social" (creating two "pentathlons" that added up to a decathlon).

With the exception of this alternative clustering framework, the methodology was virtually identical to our other projects, involving multi-disciplinary input to develop a comprehensive indicator set, setting absolute performance standards for each indicator in "collapse" and "ideal sustainability" terms, and displaying the results on a 0-100 scale. (See Figure 6.)

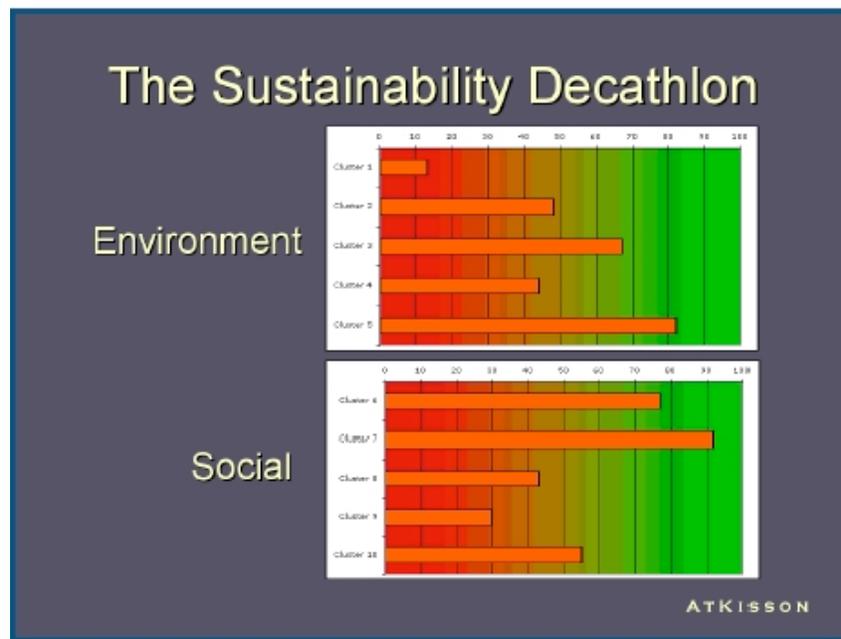


Figure 6. Application of Compass Index aggregation and scaling methodology to a different metaphorical and clustering framework, for a major global corporation.

Assessment of Success and Impact: Because this is a long-term project that will be phased in over the course of several years, it is too early to evaluate success. Moreover, we do not have full or continuous access to the project, but instead have simply provided the company with a methodology, and with training in how to use it; no results have been made public. However, we can report that inter-departmental meetings to review the model and select indicators have been considered successful, and have accomplished their objective of giving disparate actors within the corporation a sense of common

purpose and a sustainability goal. Most importantly, the indexing methodology has helped to institutionalize absolute standards for sustainability with regard to long-term specific goals, such as the elimination of toxic compounds, zero tolerance for child labor, and no net contribution to global warming.

Factors Affecting Success and Impact: The company has a clear and public commitment to sustainability, as well as long-term committed leaders in the relevant departments who share a sustainability vision. While external and market forces are also in play, the importance of internal leadership and vision cannot be overemphasized, since these become translated into committed action over the long term, as well as to consistent resources for the work in terms of time and budget.

LESSONS LEARNED

The detailed review of these three cases, together with our observation of the Compass Index method in practice elsewhere (including the Orlando project where the method was first introduced), leads us to a number of preliminary conclusions regarding the strengths and weaknesses of this specific method, as well as of aggregated sustainability performance scales in general.

1. Success of an integrated, sustainability-oriented indicator system depends first and foremost on people and organizations.

The factor most correlated with success in our observation has not been issues regarding the method itself, but people, and specifically the consistent and long-term commitment of leaders and project managers. In Orlando, the program remained robust as long as the project director — who was strongly committed to the project — was there. Once she left, the project was no longer prioritized by the sponsoring organization.

The lengthier summary of the New Orleans project underscores this point more intensely. In that case, commitment to the project has waxed and waned; the usefulness of the indicators has accordingly waxed and waned as well. As project participants refocus their attention and interest swells, time and money are found to invest in it; and as attention gets diverted to other priorities driven by changes in organizations or personal interest, the indicators get perceived as less important as well. In contrast, where leaders maintain a clear vision of the indexing system as a critically important tool, the system avoids the up-and-down fate associated with those more negative examples.

2. Continued development and support for an integrated indicator project depends on users experiencing it as having practical and strategic utility.

Useful application of a complex and scaled indicator set creates a typical "virtuous circle," where successful use leads to continued development, which leads to still more successful use. For example, the Sustainable Pittsburgh Compass-based indicator project has received consistently high priority from its sponsoring organization and funding

agencies, partly because of leadership (as noted above), but partly because the product has consistently proven itself to be useful to them and to others in the region, particularly in a strategic planning context.

3. Performance scales can be useful in public communication, but their usefulness in that regard is entirely dependent on political and cultural context.

In a highly skeptical or polarized cultural context, whether in the public or private sphere, aggregation and scaling methodology can become an easy target for stirring up controversy, which can in turn distract the public from an engagement with the issues. For example, in Orlando, the use of the Compass Index scale was deemed extremely useful as an attention-getter on first release in 2000, and nearly irrelevant two years later. This change was due entirely to (perceived) changes in the political and cultural climate of the region, just in that period, and the expectation that wide publication of the index would make it — and the sponsoring organization — the target of hostile attention. In Pittsburgh, an existing plethora of indicator-based studies and a culture of skepticism among opinion-leaders made the Compass Index performance scale only useful in specific, strategic planning contexts.

In the business-and-investment context, however, the Compass Index methodology was immediately accepted after its logic was explained, and it was considered highly useful and relevant. Perhaps this because business people, and particularly investment decision-makers, are used to working with highly aggregated performance measures. They understand the usefulness of having an overall trend measure that can also be drilled into, in order to retrieve details on causative factors and important constituent trends.

4. Performance scales appear to be most consistently useful in a strategic planning and decision-making context.

In every instance of the Compass Index's full implementation, the primary benefits appear to be in the presentation of a systemically sophisticated overview of conditions in the region or company, and in identifying areas in need of priority attention. As the developers of the Compass Index performance scale, we interpret this as good news, because promoting sustainability standards and systems-thinking in decision-making was the primary reason for the development of the methodology.

5. Methodology questions relating to selecting, aggregating, weighting and scaling indicators are only controversial among indicator and data experts.

In our experience, neither the media nor most decision-makers expressed critical interest in the actual methodology behind the Compass Index performance scale. There is a benefit to this inattention to the details, of course: conversations about the Index results tend not to get stuck on technical questions, and are focused instead on the trends themselves and on strategic responses to them. The weakness is similarly apparent, in that a lack of critical engagement means a lack of understanding. Since the purpose of the Compass Index methodology is, in part, to "raise the bar" on sustainability

understanding, including what "collapse" and "sustainable" conditions mean in concrete terms, this finding is a bit of a disappointment. The scales still do their job, we believe, by orienting people in the right direction in performance terms, regardless of whether people understand them or not. But it is not clear that users will understand the reasons for urgency in their action, in sustainability terms, unless the use of the scale is accompanied by continuous messaging about what sustainability *means* (for each parameter or indicator) and why it is important to strive for sustainability and avoid conditions that could lead to systemic collapse.

On the other hand, where the groups are professionally sophisticated about the use of data, indicators, and indices, the Compass Index method has not been as successful, because these groups find it difficult to come to agreement on the range of technical decisions that must be made to create such an index. Development of the Compass Index involves indicator selection, data gathering, clustering, weighting, aggregating and performance scaling on an absolute scale. Each part of that process can reasonably be questioned and challenged, and among more technically oriented groups, virtually all of them are. The fact that the Compass Index chooses simple solutions over complicated ones (for example, simple averaging instead of more complicated weighting schemes) in order to maximize transparency does not reduce the opportunities for controversy. We determine that where technically sophisticated groups are the primary target audience, indexing schemes of this general type are not recommended, because they will distract such groups away from an engagement with the primary data.

Technical critique is hardly unique to the Compass Index, however. All such indices receive their share of skeptical challenge from informed experts, and some experts hold rigorously to a general principle that "indexing is bad," because it hides data details in a "black box." We submit that in a world demanding simple interpretations of increasingly complex and plentiful data, indexing is a "necessary evil." Our view is that one must use it judiciously and transparently, and as the above points note, with careful attention to the cultural, political, and organizational context.

CONCLUSIONS

Five years of experimentation with the Compass Index methodology leave us optimistic. While we have noted problems in use of the method in this paper, we should emphasize that most groups respond well to our presentations of the Compass Index and even its underlying methodology. Indexing generally does not, in our experience, lead to a reduced engagement with underlying trend data; it increases that engagement, by making the data more approachable, and by awakening a curiosity about the details.

More importantly, the Compass Index has helped to establish ideal or absolute systems-based performance standards as the operational goal for a wide variety of sustainable development initiatives, in both the public and private sphere. In a world where sustainability continues to be critiqued for "vagueness" and "attempting to be all things to all people," we believe a methodology of this type provides a powerful counter-argument,

and can provide clear strategic guidance to those seeking to make sustainable development a reality.

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