

A Brief History of the Birth of Context-Based Sustainability (CBS)

A Personal Account by
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Who, what, when and where? (1/4)

- Context-Based Sustainability (CBS), the methodology, was developed by Mark W. McElroy, PhD starting in 2005, including during his work on – and as part of – his doctoral dissertation at the University of Groningen
 - Completed in 2008: <https://www.rug.nl/research/portal/files/13147569/DISSERTATION-2.pdf>
- The hallmark of CBS is, and always has been, its interpretation of the sustainability performance of organizations as being predicated upon:
 - The measurement of impacts on multiple capitals relative to organization-specific norms, standards, or thresholds (NSTs) for what such impacts would have to be in order to be sustainable (empirically so)
 - The idea that such NSTs must be expressed in terms of the carrying capacities of vital capitals and (organization-specific) allocations of the responsibilities to maintain them (i.e., to preserve and/or continually produce them at levels required to ensure human or stakeholder well-being)

Who, what, when and where? (2/4)

- Metrics used to assess performance, according to CBS, also took (and still do) the characteristic form of quotients, or what McElroy referred to as “sustainability quotients”:

$$S = A/N$$

Where:

S = Sustainability performance

A = Actual impacts on the carrying capacity of a capital

N = Normative impact on the carrying capacity of the same capital

And where:

- For impacts on natural capital, quotient scores of ≤ 1.0 signify sustainable performance; > 1.0 signifies unsustainable
- For impacts on all other capitals, quotient scores of ≥ 1.0 signify sustainable performance; < 1.0 signifies unsustainable

Who, what, when and where? (3/4)

- A timeline for the original conception and initial disclosure of CBS is as follows:
 - **May 2005:** McElroy gives a presentation at a colloquium held by the Center for Sustainable Innovation, or CSI (now the Center for Sustainable Organizations, or CSO) at Dartmouth College in Hanover, NH: *Corporate Sustainability Management and Innovation Colloquium* (May 28-29, 2005; see following page for related news item posted on CSI website that year)
 - McElroy's presentation was on May 29, 2005 and was entitled, "Re-Casting the Triple Bottom Line – Calculating Social and Ecological Footprints"; in it, he shared his thinking for the first time on the importance of assessing impacts on the carrying capacities of multiple capitals as a basis for determining the sustainability performance of organizations, and the role 'sustainability quotients' can/should play in making such determinations; his initial thinking on organization-specific NSTs for such impacts was also included; earlier drafts of his presentation are dated from April, the month before.
 - **Fall 2005:** McElroy enters into the doctoral dissertation program at the University of Groningen, where he would spend the next 3 years developing CBS into a fully executable form, while also (a) publishing on his ideas, including with others, and (b) consulting with organizations to pilot CBS (e.g., at Ben & Jerry's and Cabot Creamery Co-op in Vermont)
 - McElroy completes and publishes his doctoral dissertation in November, 2008

Who, what, when and where? (4/4)

5.28.05 - CSI Hosts Corporate Sustainability Management Colloquium

The Center for Sustainable Innovation hosted a 2-day colloquium on Corporate Sustainability Management and Innovation this week at Dartmouth College in Hanover, NH. A variety of related presentations were given by researchers and academics from around the world, including the following:

Morning of Day 1:

- Rene Jorna: **The sustainable innovation program of NIDO, reduction in devolvement and future research (social capital)**
- Derk Jan Kiewiet: Measuring Sustainability (Images of Sustainability)
- Jo van Engelen: Sustainability issues in the ANWB (The biggest Dutch Motoring Services, comparable with the RAC, with 4 million members)

Afternoon of Day 1:

- Henk Hadders: Sustainability in Health Care; Dutch examples and questions about comparable US initiatives and experiences

Morning of Day 2:

- Mark McElroy: **Re-Casting the Triple Bottom Line – Calculating Social and Ecological Footprints**
- Joseph Firestone: **Corporate Sustainability and Risk Management**

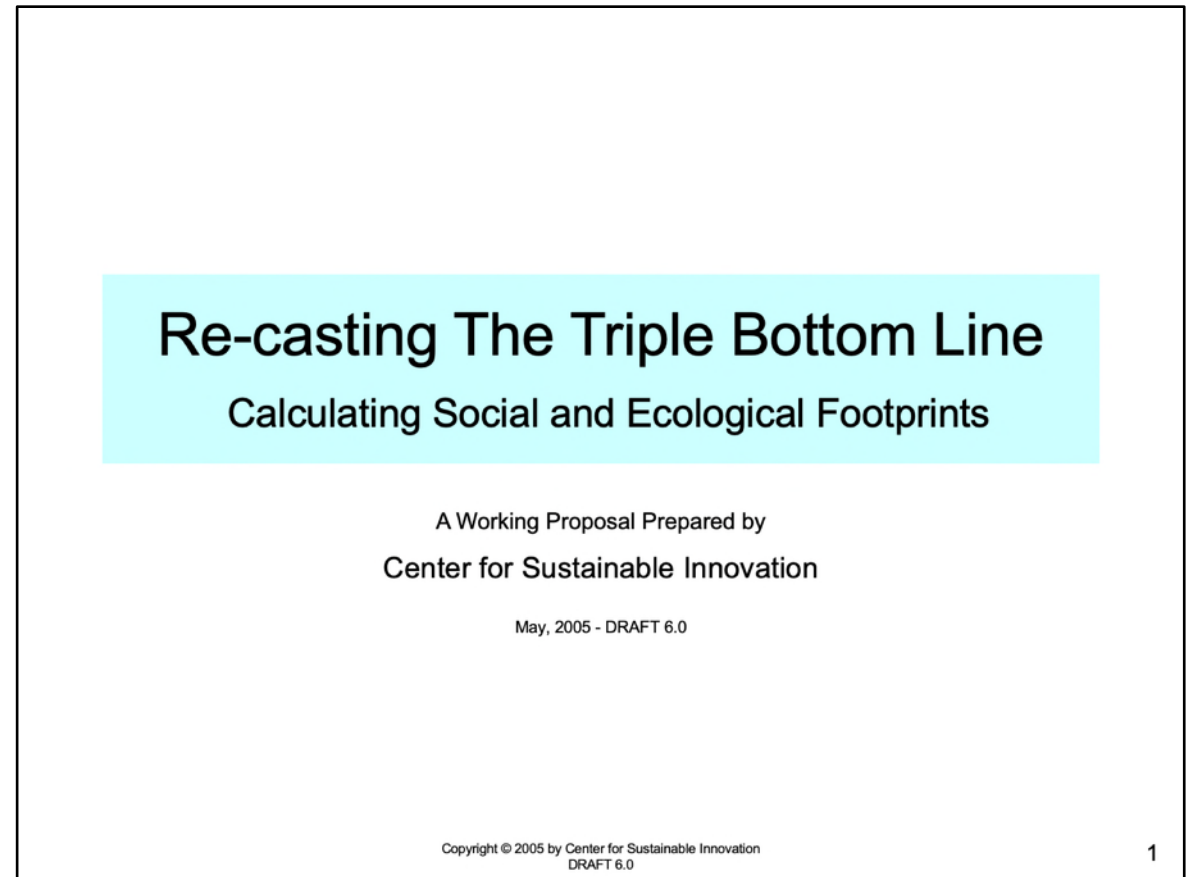


Colloquium Participants (from L to R): Joseph M. Firestone (CSI Board), Mark W. McElroy (CSI Board and Executive Director), Rene Jorna (CSI Board and University of Groningen), Henk Hadders (University of Groningen), Jo van Engelen (University of Groningen), Steven A. Cavaleri (CSI Board and Central CT State University), Derk Jan Kiewiet (University of Groningen), Benoit Cushman-Roisin (Dartmouth) [Not Shown: Hal Hamilton (CSI Board and Sustainability Institute), and Jim Merkel (Dartmouth)]

Source: <https://www.sustainableinnovation.org/csi-hosts-colloquium.html>

The initial public disclosure: May 29, 2005

- Took place in McElroy's May 29, 2005 presentation at the CSI colloquium at Dartmouth College
- The presentation, entitled "Re-Casting the Triple Bottom Line – Calculating Social and Ecological Footprints", was actually version 6 of that presentation, which had been in development since the month before
- In total, there were more than 50 versions of that presentation posted online between April 10, 2005 and November 29, 2012
- In 2012, McElroy would publish a [book on CBS](#) with Jo van Engelen



Excerpts from initial disclosure

Foreword

- What are we talking about?
 - What's the best way for a Corporate Sustainability Management (CSM) function to measure and report on its non-financial, multi-bottom line impacts?
 - What does 'sustainability' mean to CSM, and how can we measure and report it in practical ways?
 - Is the Triple Bottom Line (TBL) framework appropriate for use as a basis for CSM?
 - How can we resolve the confusion surrounding the TBL insofar as its relationship with financial 'bottom line' reporting and other aspects of the discipline are concerned (e.g., Corporate Social Responsibility, Business Ethics, etc.)?
- About this document:
 - Starts with theory, but is intended to end with practice-oriented ideas for CSM
 - Is a perpetual draft, a working document (version number always changing as new insights occur and progress is made)
 - Is intended to draw comments and feedback, so please contact us with your ideas (e-mail Mark W. McElroy at mmcelroy@vermontel.net)

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Excerpts from initial disclosure (cont.)

Introduction

- The “Triple Bottom Line” (TBL) is an organizing principle for sustainability measurement and reporting originally developed by John Elkington and his London-based organization, *SustainAbility*
- Many attempts have been made to separately develop practical accounting tools for each of the three ‘bottom lines’, but:
 - No standardized approaches for any of them have yet been adopted
 - And no combined approach that would integrate measures from all three bottom lines into a unified value, or score, have yet been developed, either
- We agree with the ontological commitment implied by the TBL, but we see economic capital as merely a form of social capital – thus, there are really only two fundamental bottom lines of interest to CSM, not three
- We take inspiration, as well, from efforts underway on the ecological side of the analysis to measure and express sustainability in true bottom-line ways:
 - Such as the Ecological Footprint tool (www.footprintnetwork.org)
 - And as formulated by Herman Daly in his 3-part definition of sustainability

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Introduction (cont.)

- Before sharing our ideas for re-casting the TBL and taking it one step closer to a practical form, here are some key premises we relied on:
 - The TBL corresponds to three types of capital: ecological, social, and economic.
 - Economic capital is actually a type of social capital, so there are really only two fundamental forms of capital involved in TBL: ecological and social.
 - Sustainability, the concept, entails dyadic operators¹: two things dynamically interacting with one another, with one playing the role of producer/supplier and the other consumer/user. The consumer/user can either operate within the limits of resources provided by the producer/supplier, or it can match or exceed them. If it exceeds them, its behavior is unsustainable relative to the capability, or ‘carrying capacity’, of the producer/supplier to support them.
 - Importantly, consumer/users can also cultivate and grow capital, not just use it!
 - This fundamental description of sustainability can be applied to the non-material world of social capital, not just the material world of physical objects and the ecology; that is what we explore on the pages that follow.
 - Because of the duality of consumer/users and producer/suppliers, measures of sustainability are best expressed as ‘quotients’ (‘A divided by B’).

1. See http://www.sustainableinnovation.org/Concept_of_Sustainability.pdf

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Highlighting above added here to call attention to key CBS concepts presented at Dartmouth in 2005; McElroy would go on to modify his capital taxonomy views, while holding true to the application of CBS to any and all of them as noted above

Excerpt from initial disclosure re: “Quotients”

- This was an early articulation of sustainability quotients that would later be changed by McElroy in his dissertation in several important ways:
 - Denominators in Social Bottom Line quotients would drop their focus on gaps and address social capital needs in their entirety (i.e., not just the missing pieces)
 - The same would be done for the Economic Bottom Line
 - The Modified Social Bottom Line would be dropped altogether
- A more robust implementation of CBS-based Triple Bottom Line measurement and reporting would also later be developed in a collaboration between McElroy and Martin Thomas: the [MultiCapital Scorecard](#)

The Measures We Propose: Quotients

Ecological Bottom Line	$\frac{\text{Total Ecological Footprint}}{\text{Own Fair Share of Supply of Natural Capital}}$	=	Ecological Quotient (EQ)	<ul style="list-style-type: none">- The <u>lower</u> the better- EQ ≤ 1 is sustainable- EQ > 1 is unsustainable
Social Bottom Line	$\frac{\text{Total Social Footprint}}{\text{Own Fair Share of Supply Gap in Social Capital}}$	=	Societal Quotient (SQ)	<ul style="list-style-type: none">- The <u>higher</u> the better- SQ ≥ 1 is sustainable- SQ < 1 is unsustainable
Economic Bottom Line	$\frac{\text{Total Economic Footprint}}{\text{Own Fair Share of Supply Gap in Economic Capital}}$	=	Societal Economic Quotient (SEQ)	<ul style="list-style-type: none">- The <u>higher</u> the better- SEQ ≥ 1 is sustainable- SEQ < 1 is unsustainable
Modified Social Bottom Line*	Societal Quotient	X EQ =	Modified Societal Quotient (MSQ), aka the <i>Triple Bottom Line</i>	<ul style="list-style-type: none">- The <u>lower</u> the better

***In the Modified Social Bottom Line, we modify the score received for social capital to reflect an organization's ecological performance, because society is a dependent subsystem of the ecology – this results in a true *Triple Bottom Line* blended score!**

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Closing excerpt from initial disclosure

Revisiting “Sustainability”

- We started out by defining sustainability and by noting the eco-centric nature of most definitions
- But now that we have addressed the specific meaning of social and economic capital (i.e., non-environmental forms of capital), is it possible for us to extend the 3-part definition of sustainability we proposed earlier – i.e., a human social system is sustainable if and only if:
 1. Its rate of use of renewable resources does not exceed the rate at which such resources are produced and/or replenished;
 2. Its rate of use of non-renewal resources does not exceed the rate at which alternative substitutes are developed;
 3. Its rate of waste emissions into the environment does not exceed the rate at which such wastes can be assimilated by the environment.
- This clearly needs to be re-cast in order to take social and economic impacts more fully into account
- What we need, then, is a second definition of sustainability that takes non-financial, non-ecological impacts into account

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Revisiting “Sustainability” (cont.)

- So here’s what we propose....A human system is socially sustainable if and only if:
 - Its net impact on available social capital in society either meets or exceeds its just and equitable fair-share burden to contribute to the supply of society’s social capital needs.
- We need this second definition because:
 - Unlike ecological capital, we are dealing with a type of capital that humans can create
 - The ecological definition stresses impacts that either meet or fall below supply; the social definition calls for impacts that either meet or rise above demand
- Note that despite the differences between the two definitions we advocate, both comply with the goal state envisioned in the Brundtland definition of sustainability
 - Brundtland defined the end without specifying the means
 - We, in turn, have attempted to fill that gap!

- END -

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the history of CBS, contact:

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