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Table of Contents
Volume 5, Issue 2, 2017

Editorial

Articles

Journal of Management for Global Sustainability Volume 5, Issue 2, 2017: 1–6

NOW WHAT FOR THE WORLD'S BUSINESS SCHOOLS?

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THE CHALLENGE ("What's so?")

Our species faces the greatest challenge it has ever faced: how to transform the currently dominant global producing-distributing-consuming system from one that is destroying the planet's capacity to support our species into one that will enable our species and all others to continue to exist and "flourish forever" (in the words of John Ehrenfeld), "heal a broken world" (in the words of the Jesuit Task Force Report on Ecology), and achieve "integral ecology," "care for the vulnerable," and "care for our common home" (in the words and sub-title of Pope Francis's encyclical *Laudato Si'*). The system in which we live is clearly broken. It is continuously and increasingly damaging all aspects of the global ecosystem, creating almost unheard of levels of income and wealth inequality across the globe, bringing about climate change, global warming, and weather weirding that impact every area of the world, and marshaling in the sixth great extinction.

The challenge facing our species can seem particularly intractable because the ways we produce, distribute, and consume are embedded in a seemingly well-integrated, self-reinforcing, and powerful mechanism that is so well articulated and pervasive that it is hard to imagine even one possible alternative. And even if we can imagine many alternatives, the barriers to change seem so numerous and so impenetrable that we run the risk of disempowering ourselves and not even attempting to bring about changes that might look attractive and promising.

Nevertheless, while the very completeness and firmly interconnected nature of the global producing-distributing-consuming system present

a seemingly impossible challenge, it is clear that the system cannot continue in its current form for very long. The planet's capacity to sustain it is fast being exhausted, and so it needs to be changed. One question, then, might be "how and when will it be changed?," although a better question might be "how can we intervene in the system to bring about change in directions that are desirable for our own and other species?"

From its inception, this *Journal* has been concerned with exploring how a more sustainable world can be sought and brought into being. Past, current, and future articles have been investigating and will continue to investigate ways in which any aspect of society can contribute to the necessary transformations in our habits of producing-distributing-consuming and ways of being in the world; in other words, how we can meet the greatest challenge facing our species. This issue of the *Journal* is no exception; it contains a number of articles that touch upon or address this challenge. These articles are introduced below, following a brief report on one initiative to embrace the challenge of global transformation.

ONE RESPONSE TO THE CHALLENGE ("So what?")

The good news about such a seemingly monolithic, integrated, and all-encompassing system is that there are also a seemingly infinite number of places to intervene in it, places where it may be possible to start a positive transformation. One such place, which may be of special interest to readers of this journal, might be the domain of global business education, and one approach in this domain that might also be equally interesting is a 2016 initiative to transform business education into a vehicle for changing the global producing-distributing-consuming system, an initiative inspired by the MacArthur Foundation's 100&Change competition.

On June 2, 2016, the MacArthur Foundation announced a $100 million competition to solve a significant social problem. On July 10, the possibility of entering such a competition—with a proposal to transform business education into a vehicle for changing our global producing-distributing-consuming system—was briefly discussed at the 19th Annual Meeting of the Colleagues in Jesuit Business Education (CJBE) at Le Moyne College in Syracuse, New York. Eight days later, in Nairobi, Kenya, the following resolution was unanimously passed at the 22nd Annual World Forum of the International Association of Jesuit Business Schools (IAJBS):

> The annual meeting of the IAJBS requests the IAJBS leadership, CJBE leadership, and the rest of the network of Jesuit business schools to work together to apply for the MacArthur Foundation 100 million dollar 100&Change competition with a project to transform Jesuit business education to be fully aligned with the wisdom in *Laudato Si'*, with our universally-valid Jesuit educational tenets, and with the need for global sustainability, social justice, and poverty alleviation.

On October 2, 2016, a proposal to utilize the network of Jesuit business schools as a vehicle for transforming not just Jesuit business education but all of business education and the world's producing-distributing-consuming system was submitted to the MacArthur Foundation. Unfortunately, it did not win the hundred million dollar prize, but its basic conceptual structure might still provide the germ of an idea for transforming both business education and our entire producing-distributing-consuming system.

The 2016 proposal accepts that global business education, to a very large extent, currently does what it is asked to do: train people to support, contribute to, and build their careers in the existing producing-distributing-consuming system in which we all live. But since that system is broken and cannot continue on its current trajectory, the proposal admits that current business teaching and research are actually contributing to the problem of global unsustainability rather than providing bold leadership for solving it.

The basic framework of the proposal also asserted that there is no single agreed upon model for reforming business teaching and research to become vehicles for transforming how we produce, distribute, and consume. Thus, building on Professor Hal Leavitt's observation that "when you don't know how to solve a problem, it's a good idea to give it to a group," the application proposed that the USD 100 million be invested across forty business schools that will each commit to transform its own curriculum in whatever way it chooses (or perhaps discovers), and to do so in the impossibly short period of only three years. This time frame was chosen partly because of the urgency of the global unsustainability problem and partly on the hypothesis that, in academe and elsewhere, what cannot be done in 20 years might well be possible to do in three.

The concept of the proposal, therefore, was not to train students who would, in 20, 30, or 40 years, reach high enough positions in business and other organizations to be able to start bringing about the needed transformations in our producing-distributing-consuming system. Instead, the intent was to create a global conversation inspired by 40

bold business schools seeking very, very visibly to do the impossible, a loud discussion that would get the immediate attention of global business, educational, governmental, and not-for-profit institutions around the world and, in doing so, begin the transformation of our producing-distributing-consuming system right now instead of decades down the road.

NOW WHAT FOR THE WORLD'S BUSINESS SCHOOLS? ("Now what?")

What we teach and research in business schools may well be a vehicle for influencing and changing how our world produces, distributes, and consumes. Another 100&Change competition is scheduled for 2019 and another proposal similar to the one in 2016 might be submitted.

2019 is a long way off, however, and the global unsustainability problem seems to get worse every year. Moreover, business school teaching and research continue to support, to a large extent, our existing producing-distributing-consuming paradigm. As such, although it may be desirable to put together another application for the MacArthur Foundation to accomplish the same goal—the transformation of our total producing-distributing-consuming system—it might also be possible for business schools to take the lead in acting immediately without waiting until 2020 to see if such a grant will be awarded. One place to start might be with just one business school that is willing to admit that our global system is broken, that current business school education contributes to that brokenness, and that will show the way to healing that brokenness by transforming its own curriculum, perhaps in alignment with the Nairobi resolution, in the impossibly short time period of only three years and doing so in such a public way that the whole world will watch.

The question is: Is there such a business school somewhere that is willing to commit to doing the impossible in such an impossibly short period of time … and are there, maybe, many other schools that can be inspired by the first school to do the same?

THIS ISSUE OF THE JOURNAL

Now to turn to the articles in this issue of the *Journal*.

In the second of three planned articles on transforming business education into a vehicle for changing our producing-distributing-

consuming system, Frank Werner and James Stoner focus on the critical role our teaching and research in finance play in influencing the entire business school curriculum. In "Transforming Finance and Business Education: Finance's Unique Opportunities," they suggest that finance has an exceptional opportunity to play a leadership role in transforming the entire business curriculum. Moreover, while every finance faculty member and department can be a leader in transforming both finance and all of business education, they also describe why the finance faculty and departments in Jesuit business schools are particularly well-placed to do so.

In "Toward a Theory of the Arts and Sustainability," Nancy Bertaux and Kaleel Skeirik also directly address the opportunities to transform our producing-distributing-consuming system and our ways of being in the world. Recognizing the need to build "a wide base of public consensus for action" (p. 53) on the major changes we must undertake, they present a theoretical framework for the role the arts can play in creating that consensus. At the core of their perspective is their insight that the arts are very likely unique in their ability to speak to our hearts and souls, that artistic complexity can be a vehicle for matching the complexity of the challenges and changes we must deal with, and that this matching can inspire public engagement with the steps we need to take to achieve a sustainable world.

In "Sustainability Vision and Practice: The Apparent Gap Between Corporate Leaders' Pronouncements and the Perceptions of Polish and U.S. MBA Students from Three Universities," Al Rosenbloom and Douglas Ross explore an important aspect of the sustainability education that we provide in our MBA programs. They collected data from three different groups of MBA students and contrasted their perceptions of the training they were receiving with the skills and mindsets that corporate leaders indicated they would like their employees to have. While the students generally perceived a "positive link between sustainability practices and [the] performance" (p. 75) of business organizations, the authors' findings suggest that there were three gaps in student perceptions vis-à-vis the apparent needs of businesses:

> between students wanting more in-depth study of sustainability versus the dearth of opportunities currently provided in their [MBA] programs (Gap 1); between students wanting engaged faculty members who are fully committed to teaching sustainability topics versus current in-class experiences of faculty perfunctorily presenting sustainability issues (Gap 2); and between students' normative understanding that sustainability improves corporate performance versus their assessment that their MBA

> programs are not fully developing the sustainability competencies needed to link performance outcomes with sustainability (Gap 3). (p. 92)

They also observe that Gap 3 "results in the students' perception that they are inadequately prepared to deal with workplace barriers that prevent sustainability from becoming a central, organizational concern" (p. 92). Rosenbloom and Ross then suggest ways these gaps can be closed.

In "Faith-Based Socially Responsible Enterprises: Selected Philippine Cases," Aliza Racelis focuses on the roles faith-based organizations are playing and can continue to play in contributing to a more sustainable world. She notes that particularly noteworthy is the success of faith-based social enterprises "in effecting sustainable and holistic change … due to their rootedness in [and connectedness to] the community [thus being enabled to bridge socio-economic divides], the social capital they help produce, [the] respect they receive from the people," (p. 118) and an integrated approach to development and environment. Based on a review of the literature on faith-based social enterprises and her study of three Philippine ventures, she identifies the distinctive set of values of such organizations, their particular modes of operation and governance, and the unique places they hold within their communities and the larger society. She also provides a framework for predicting their success and contributions to a more sustainable world on the basis of two key factors: spiritual leadership and what she calls "Christian social capital."

Finally, Marinilka Kimbro and Eric Wehrly directly address one of the major sustainability-creating areas where we need innovation, transformative thinking, and transformative methods of analysis: capital allocation decisions involving projects with viable sustainability-related alternatives. In "Capital Planning, Selection, and Investment: Integrating Sustainability in Decision-Making," they detail major domains where existing capital investment analysis techniques and ways of thinking are mis-analyzing promising sustainability-contributing projects and often putting them at a disadvantage. The authors then go beyond pointing out the weaknesses of existing analytic techniques and thinking to provide concrete suggestions and processes for improving capital decisions that can contribute to a more sustainable world. Their article provides an excellent example of the kinds of new thinking that we must bring to the whole domain of transforming our producing-distributing-consuming system and ways of being in the world.

Journal of Management for Global Sustainability Volume 5, Issue 2, 2017: 7–13

¿Y AHORA QUÉ PARA LAS ESCUELAS DE NEGOCIOS DEL MUNDO?

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EL DESAFIO ("¿Entonces qué es?")

Nuestra especie se enfrenta al desafío mas grande de toda la historia: cómo transformar el sistema dominante actual de producción-distribución-consumo de uno que esta destruyendo la capacidad del planeta de sostener a nuestra especie a uno que permita que nuestra especie y todas las otras puedan continuar existiendo y "prosperando por siempre" (usando las palabras de John Ehnfeld), "curar un mundo quebrantado" (usando las palabras del Reporte del Equipo de Trabajo sobre la Ecología Jesuita), y lograr "una ecología integral," "cuidar a los vulnerables," y "cuidar nuestro hogar compartido" (usando las palabras y el subtítulo de la encíclica *Laudato Si'* del Papa Francisco). Es evidente que el sistema en el que vivimos no funciona. Continuamente e incrementadamente está perjudicando todos los aspectos del ecosistema global, creando niveles nunca antes vistos de disparidad en los ingresos y riquezas alrededor del mundo, generando el cambio climático, calentamiento global, y cambios de clima inusuales que afectan a todo el planeta, dando pie a la sexta gran extinción.

El desafío al que se enfrenta nuestra especie puede parecer particularmente irreversible por la manera en la que producimos, distribuimos, y consumimos está incrustada en un mecanismo aparentemente bien integrado, bien reforzado, y poderoso que está tan bien articulado y anclado que es difícil imaginar una posible alternativa. Y aunque podamos imaginarnos muchas alternativas, los obstáculos para poder cambiar parecen ser tan numerosos e impenetrables que corremos

el riesgo de des-empoderarnos y ni siquiera intentar generar cambios que pueden parecer atractivos y prometedores.

Aun así, mientras la naturaleza muy completa y firmemente interconectada del sistema global de producción-distribución-consumo representan un desafío que parece imposible, está claro que el sistema no puede continuar en su forma actual por mucho tiempo. La capacidad del planeta de sostener se está agotando rápidamente, y por ende debe cambiar. Entonces, la pregunta puede ser "¿Cómo y cuándo será cambiado?," aunque una mejor pregunta podría ser "¿Cómo podemos nosotros intervenir en el sistema para generar cambios en direcciones que son deseables para nuestra y otras especies?"

Desde su concepción, este *Journal* se ha preocupado por explorar cómo se puede procurar y crear un mundo más sostenible. Artículos anteriores, actuales y futuros han estando investigando y continuaran investigando maneras en las cuales ciertos aspectos de la sociedad pueden contribuir a las transformaciones necesarias de nuestros hábitos de producción-distribución-consumo y maneras de estar en el mundo; en otras palabras, cómo podemos enfrentarnos al más grande desafío de nuestra especie. Esta edición del *Journal* no es la excepción; contiene un numero de artículos que tocan o se enfrentan a este desafío. Estos artículos son introducidos a continuación, después de un breve reportaje sobre una iniciativa que debemos acoger para combatir la transformación global.

UNA RESPUESTA AL DESAFÍO ("¿Qué importa?")

Las buenas nuevas sobre este sistema monolítico, integrado y todo acaparador es que también parecen haber un numero infinito de lugares donde puede ser intervenido, lugares donde podría ser posible iniciar una trasformación positiva. Un lugar, el cual puede ser de gran interés para los lectores de esta revista, puede ser el área de la educación empresarial mundial, y un método en esta área que también puede ser interesante, es una iniciativa del 2016 de transformar la educación empresarial en un vehículo para cambiar el sistema global de producción-distribución-consumo, una iniciativa inspirada por el concurso de la Fundación MacArthur, 100&Change.

El 2 de Junio del 2016, la Fundación MacArthur anunció un concurso de $100 millones para resolver un problema social significante. El 10 de Julio, la posibilidad de entrar a este tipo de concurso—con una propuesta para transformar la educación empresarial en un vehículo para cambiar el sistema global de producción-distribución-consumo—fue brevemente

discutida en el 19no Encuentro Anual de los Colegios de Educación Empresarial Jesuita (19th Annual Meeting of the Colleagues in Jesuit Business Education (CJBE)) en La Escuela Le Moyne en Syracuse, Nueva York. Ocho días después, en Nairobi, Kenia, la siguiente resolución fue aprobada de forma unánime en el Vigesimosegundo Foro Anual Mundial de la Asociación de las Facultades de Negocios Jesuitas (22nd Annual World Forum of the International Association of Jesuit Business Schools (IAJBS)):

> El encuentro anual de la IAJBS solicita a la jefatura de IAJBS, la jefatura de CJBE, y el resto de la red de facultades de negocios jesuitas a trabajar juntos para aplicar a la concurso de 100 millones de dólares de la Fundación MacArthur, 100&change con un proyecto para transformar la educación empresarial Jesuita para que esté completamente alineada con la sabiduría de *Laudato Si',* con nuestros principios educacionales Jesuitas universales, y con la necesidad de una sostenibilidad global, justicia social, y la reducción de la pobreza.

El 2 de Octubre del 2016, una propuesta de utilizar la red de facultades de negocios Jesuitas como un vehículo para transformar no solamente la educación empresarial Jesuita, pero toda la educación empresarial y el sistema mundial de producción-distribución-consumo fueron enviados la Fundación MacArthur. Desafortunadamente, no ganó el premio de 100 millones de dólares, pero su base estructural conceptual aún puede ser la semilla de una idea para transformar la educación empresarial y todo nuestro sistema de producción-distribución-consumo.

La propuesta del 2016 acepta que la educación empresarial global, en su mayoría, actualmente hace lo que se le pide: entrenar personas para que apoyen, contribuyan, y construyan sus carreras en el sistema existente de producción-distribución-consumo en el que todos vivimos. Pero ya que este sistema no funciona y no puede continuar su trayectoria actual, la propuesta admite que las enseñanzas e investigaciones empresariales actuales están contribuyendo al problema de la insostenibilidad en vez de proveer un liderazgo contundente para solucionarlo.

El método básico de la propuesta también aseguró que no hay un modelo único aceptado para reformar la educación e investigación empresarial y convertirla en un vehículo para transformar como producimos, distribuimos, y consumimos. Por ende, elaborando sobre la observación del profesor Hal Leavitt de que "cuando no sabes como resolver un problema, es una buena idea dárselo a un grupo," la aplicación propuso que los 100 millones de dólares fueran invertidos en 40 facultades de negocios, y cada cual se comprometería a transformar sus

propios currículos en la manera que ellos quieran (o quizás descubran), y que lo hicieran en el periodo imposiblemente corto de tres años. Este periodo de tiempo fue escogido en parte por la urgencia del problema global de insostenibilidad y en parte también por la hipótesis que, en la academia y otras partes, lo que no se puede hacer en 20 años quizás sea posible en tres.

Es por eso, que el concepto de la propuesta no era entrenar a los estudiantes quienes, en 20, 30, o 40 años, llegarían a posiciones lo suficientemente altas en sus empresas u otras organizaciones para poder iniciar las transformaciones necesarias en nuestro sistema productivo-distributivo-consumo. En cambio, la intención era crear una conversación global inspirada por 40 facultades de negocios valientes buscando, y muy visiblemente lograr lo imposible, una conversación vocifera que generaría la atención inmediata de las empresas globales, instituciones educativas, gubernamentales, y sin animo de lucro en todo el mundo y, al hacer esto, iniciar la transformación de nuestro sistema de producción-distribución-consumo ahora mismo en vez de en las siguientes décadas.

Y AHORA QUE PARA LAS FACULTADES DE NEGOCIOS DEL MUNDO ("¿Ahora qué?")

Lo que enseñamos e investigamos en las facultades de negocios puede ser el vehículo para influenciar y cambiar como el mundo produce, distribuye, y consume. Otro concurso de 100&change está programado para el 2019 y otra propuesta similar a la enviada en el 2016 quizás sea postulada.

Aún falta mucho para el 2019, y el problema de insostenibilidad global parece empeorar cada año. Además, las enseñanzas e investigaciones de las facultades de negocios continúan apoyando, en su mayoría, nuestro paradigma actual de producción-distribución-consumo. Como tal, aunque pueda parecer deseable desarrollar una propuesta para aplicar a la Fundación MacArthur para cumplir con el mismo objetivo—la trasformación total del sistema de producción, distribución-consumo—también sería posible para las facultades de negocios tomar la iniciativa en actuar inmediatamente sin esperar hasta el 2020 para ver si se gana el concurso. Un punto de partida puede ser solo una facultad de negocios que esté dispuesta a admitir que nuestro sistema global no funciona, que la educación actual en las facultades de negocios contribuye al disfuncionalidad, y que eso mostrará el camino hacia una solución a la disfuncionalidad al transformar su propio currículo, quizás alineándose con la resolución de Nairobi, en el periodo de tiempo imposiblemente

corto de tres años y haciéndolo de manera publica de tal manera que todo el mundo observe.

La cuestión es: ¿existe tal facultad de negocios en algún lado que esté dispuesta a comprometerse a hacer lo imposible en un periodo de tiempo imposiblemente corto … y hay, quizás, otras facultades que encuentren inspiración de la primera escuela para hacer lo mismo?

ESTA EDICIÓN DE LA REVISTA

Ahora sobre los artículos de esta edición del *Journal*.

En el segundo de tres artículos previstos sobre la transformación de la educación empresarial en un vehículo para cambiar nuestro sistema de producción-distribución-consumo, Frank Werner y James Stoner se enfocan en el papel fundamental que tienen nuestras enseñanzas e investigaciones en las finanzas y como esto influencia todo el currículo de la facultad de negocios. En "Transformando la Educación Financiera y Empresarial: Las Oportunidades Únicas de las Finanzas," ellos sugieren que las finanzas tienen una oportunidad excepcional de ser protagonistas al transformar la totalidad del currículo empresarial. Además, mientras cada miembro de la facultad de finanzas y sus departamentos puede ser un líder al transformar toda la educación de finanzas y empresarial, ellos también describen porque la facultad de finanzas y departamentos en los colegios empresariales Jesuitas están bien posicionados para hacer esto.

En "Hacia una Teoría de las Artes y la Sostenibilidad," Nancy Bertaux y Kaleel Skeirik también hablan específicamente sobre las oportunidades para transformar nuestro sistema de producción-distribución-consumo y nuestra forma de estar en el mundo. Reconociendo la necesidad de construir "una base amplia de un consenso público para la acción" (p. 53) sobre los grandes cambios que demos lograr, ellos presentan un modelo teórico para el papel que pueden tener las artes en generar dicho consenso. En el centro de su perspectiva está su idea de que las artes quizás son únicas en su habilidad para hablar directo a nuestros corazones y almas, que la complejidad artística puede ser un vehículo para emparejar la complejidad de los desafíos y cambios que demos enfrentar, y que este emparejamiento puede inspirar la participación pública en los pasos que debemos tomar para lograr un mundo sostenible.

En "Visión y Practica en Sostenibilidad: La Aparente Brecha Entre lo que Dicen los Lideres Corporativos y las Percepciones de Estudiantes de MBA Polacos y Estadounidenses de Tres Universidades," Al Rosenbloom

y Douglas Ross exploran un aspecto importante de la educación sobre la sostenibilidad que proveemos en nuestros programas de MBA. Ellos obtuvieron datos de tres grupos diferentes de estudiantes de MBA y los contrastaron con sus percepciones de la formación que estaban recibiendo con las habilidades y mentalidades que los lideres corporativos indicaron que les gustaría que sus empleados tuvieran. Mientras los estudiantes generalmente percibieron un "vinculo positivo entre las practicas de sostenibilidad y el rendimiento" (p. 75) de organizaciones empresariales, los hallazgos de los autores sugieren que hay tres brechas entre la percepción de los estudiantes y las necesidades aparentes de las empresas:

> Entre los estudiantes deseando un estudio más profundo sobre la sostenibilidad versus la falta de oportunidades que actualmente están disponibles en sus programas de MBA (brecha 1); entre los estudiantes deseando que los miembros de la facultad estén más involucrados y que estén completamente comprometidos a enseñarles temas de sostenibilidad versus las actuales experiencias en el salon de la facultad presentado problemas de sostenibilidad de manera "prefabricada" (brecha 2); y entre el conocimiento normativo de los estudiantes de que la sostenibilidad mejora el rendimiento corporativo versus su análisis de que sus programas de MBA no están desarrollando sus competencias en sostenibilidad al máximo, las cuales son necesarias para conectar los resultados del rendimiento con la sostenibilidad (brecha 3). (p. 92)

Ellos también observan que la brecha 3 "causa que la percepción de los estudiantes sea que están mal preparados para afrontar los obstáculos en el trabajo que impiden que la sostenibilidad se convierta en un asunto central y organizacional" (p. 92). Rosebloom y Ross entonces sugieren formas de cómo se pueden cerrar esas brechas.

En "Empresas Confesionales Socialmente Responsables: Casos Selectos de las Filipinas," Aliza Racelis se enfoca en el papel que juegan las organizaciones confesionales y pueden continuar jugando al contribuir en desarrollo de un mundo más sostenible. Ella nota que es particularmente notable el éxito de las empresas sociales confesionales "en efectuar cambio sostenible y holístico … a causa de su arraigo (y conexión) con la comunidad (por ende, ser capaces de cerrar las brechas socioeconómicas), el capital social que ellos ayudan a producir, el respeto que ellos reciben de la gente," (p. 118) y un modelo integral de desarrollo y ambiental. Basado en una revisión de literatura sobre las empresas sociales confesionales y su estudio de tres empresas filipinas, ella identifica un conjunto de valores distintivo en tales organizaciones, sus maneras particulares de operación y gobernabilidad, y el lugar especial que tienen en sus comunidades y en la sociedad en general. Ella también

provee un modelo para predecir su éxito y contribuciones a un mundo más sostenible sobre la base de dos factores clave: liderazgo espiritual y lo que ella denomina "capital social cristiano."

Por último, Marinilka Kimbro y Eric Wehrly conversan sobre una de las áreas principales de creación-sostenibilidad donde se necesita innovación, pensamiento transformativo, y métodos transformativos de análisis: decisiones de distribución de capital que involucran proyectos con alternativas sostenibles relacionadas a la sostenibilidad. En "Planificación Capital, Selección, e Inversión: Integrando la Sostenibilidad en la Toma de Decisiones," ellos detallan las áreas principales donde técnicas existentes de análisis de inversión de capitales y maneras de pensar no están analizando correctamente proyectos promisorios que aportan a la sostenibilidad y usualmente los ponen en desventaja. Los autores entonces van más allá de solo señalar las falencias de las técnicas y pensamientos analíticos actuales, dando sugerencias y procesos concretos para mejorar las decisiones de capital que pueden contribuir a un mundo más sostenible. Su articulo nos da un excelente ejemplo de los nuevos tipos de pensamientos que debemos traer a todo el proceso de transformar nuestro sistema de producción-distribución-consumo y la manera de estar en el mundo.

Journal of Management for Global Sustainability Volume 5, Issue 2, 2017: 15–52

TRANSFORMING FINANCE AND BUSINESS EDUCATION
FINANCE'S UNIQUE OPPORTUNITIES

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Abstract. Mankind faces the challenge of transforming the existing global production, distribution, and consumption system into one that is more just and sustainable and which the Earth's resources can support (e.g., Francis, 2015). Unfortunately, current business education is "part of the problem" of global unsustainability as it supports, enables, justifies, and intensifies the unsustainable aspects of the existing business system. Thus, while all people have opportunities to contribute to this transformation and are "called" to do so, university administrators and professors in all disciplines have a special opportunity and obligation to heed that call.

This article is the second of three planned articles focusing on business education, and particularly on finance teaching within that education. It describes finance professors' exceptional opportunity to become "part of the solution" and how some are already doing so. It concludes by describing why finance professors in faith-enabled business schools, such as those of the world's Jesuit universities, have an especially great opportunity to contribute to this transformation.

Keywords: business education; finance teaching; sustainability

OVERVIEW

> The greatest temptation is to work on doing better and better what should not be done at all. —Peter Drucker (quoted in Stoner, 1982: 14)

Finance professors have an exceptional opportunity to contribute toward creating a more sustainable world by transforming teaching and research in their field. However, while this article focuses on the opportunities for change in finance education and research, similar opportunities exist in all the business disciplines. Each of them currently teaches concepts, behaviors, and methodologies that have contributed to the unsustainable world we presently inhabit, and so each can make significant contributions toward a more sustainable world by transforming its own teaching and research.

This article is the second of three that follow the "What's so? So what? Now what?" theme of the *Journal*. The first article, "Transforming Finance and Business Education: Part of the Problem" (Werner & Stoner, 2015), described 1) the need to transform the dominant economic and business education paradigms that currently contribute to global unsustainability, 2) the ways current finance teaching and research are misaligned with the need for a sustainable world, and 3) how that teaching is contributing to growing national and global unsustainability problems ("What's so?").

This second article 1) describes why finance teaching and research are in a position to make special, perhaps uniquely powerful, contributions toward transforming these paradigms ("What's so?") and then 2) identifies ways finance professors and others can change, and to some extent are already changing, finance teaching and practice to become part of the solution to global unsustainability, along with examples of places where such changes are already starting to take place ("So what?"). Moreover, while all business schools can and should seek to be leaders in this transformation, this article will also note some special opportunities to contribute in this domain that are available to any faith-enabled business school and especially the schools that are members of the International Association of Jesuit Business Schools ("Now what?").

Finally, this article calls for readers to contribute to a third, follow-on article (working title: "Transforming Finance and Business Education: Recent Examples of Transformation"). That article will provide ideas

for as well as more examples of promising steps for aligning financial management teaching and research with the requirements of a sustainable world ("Now what?").

Business academics in all disciplines work long and hard to advance their respective fields' contribution to the world. These three articles are thus intended to heed Peter Drucker's warning cited above by alerting us to the dangers of continuing to make our contributions within the broken, "same-old, same-old" disciplinary paradigms that are misaligned with the realities of the 21st century, a century wherein we must find new ways to live, work, and prosper. These articles suggest that we are called to think and act imaginatively and boldly to create new approaches that will begin to solve the problems of global unsustainability.

WHAT'S SO? SAMURAI FINANCE

Like Nixon to China: Academic Finance's (Almost) Unique Opportunity

When one who is perceived as a true believer and defender of the faith openly embraces a contrary position, the impact can be dramatic and far reaching. A well-known example from recent United States history is that of Richard Nixon's trip to China in 1972 to improve American-Chinese relations. Nixon was seen as a staunch anti-Communist Cold War crusader who considered China one of the United States' greatest enemies. Had a more liberal president made the overture, the American public might have reacted negatively, assuming that he did not fully understand the ramifications of his actions. However, because of Nixon's prior beliefs, it was assumed that he had fully considered the implications of his actions and that this change to U.S. policy was wise, appropriate, and necessary.

In a similar way, finance, long the true believer in shareholder wealth maximization and a strong proponent of the neoliberal economic-political-consumerist paradigm (Boas & Gans-Morse, 2009; Mirowski & Plehwe, 2009), is in a unique position to take a leadership role in the transformation of business education. Finance and finance professors have established a high degree of credibility with business. Financial models form the basis of decision-making in many aspects of modern business activity, and those models are seen by many, with some notable exceptions, as contributing to the creation of profitable products and services, providing employment, and generating wealth. It is therefore likely that business executives would pay attention if finance professors and financial analysts began to include environmental and social effects in their research, writing, and model building. And, if faculty were to

teach this new finance, they might help produce a new generation of business leaders eager and able to transform their companies to be greater contributors to global sustainability.

Finance, however, is not the only academic discipline positioned to advocate these changes in business education. For many years, marketing professors and their textbooks have taught that consumer demand should be created and then met without probing deeply into the implications for global sustainability and human well-being. Accounting, with its origins in the Middle Ages, has measured financial activity, but professors and texts have said little about how to measure the environmental and social impacts of those operations. Teachers of business economics and their texts have done little to suggest that they are alerting their students to the limits of unending growth, leading to the wry comment by Kenneth Boulding, former president of the American Economic Association and the American Association for the Advancement of Science, that "anyone who believes exponential growth can go on forever in a finite world, is either a madman or an economist" (Boulding, 1966: 3). Although to do actual justice to economics professors, it might be fairer to say: "The only people who believe exponential growth can go on forever in a finite world are lunatics, economists, and business professors."

All these disciplines in the end have the standing to provide leadership in transforming business education. However, since the current finance paradigm is the dominant one in business education and influences what is taught throughout business curricula, a change advocated by finance faculty will likely carry far more weight than one advocated by their marketing, accounting, or business economics peers. And, as has been the case with dominant paradigms in the past, breaking with this one and challenging its powerful guardians—the gatekeepers for the prestigious "top-tier" journals and the influential players in academic appointments and promotions—will require a high level of courage (or perhaps naivety). It is therefore because of the courage that finance professionals will need to pursue this journey to its conclusion that we use the term "Samurai Finance" to denote the challenge faced by the pioneers who must be bold, whole-hearted, and unyielding in pursuit of a higher goal whose accomplishment will be fraught with difficulties and may oftentimes even seem to be impossible.

SO WHAT? MAKING SAMURAI FINANCE HAPPEN: WAYS TO ALIGN FINANCE TEACHING WITH THE REALITIES OF TODAY'S AND TOMORROW'S WORLDS

An early step in exploring how finance teaching (and research) could be aligned with the need for a sustainable world might be to develop a concept of what such a world, and perhaps organizations in it, might look like. Some recent attempts to do so have been made and more are sure to follow. All these speculative efforts suggest positive actions that can be taken, although some paint a pretty pessimistic picture of our situation and likely future (Hawken, 1993; Greer, 2008; Collins, 2011; Hertsgaard, 2011; Oreskes & Conway, 2014) while others are more optimistic (Hawken, Lovins, & Lovins, 1999; Hawken, 2007; Kahn, 2010; Lovins & Cohen, 2011; Laszlo & Brown, 2014). Some imply or advocate deep levels of true transformation (McKibben, 2010; Klein, 2014) while others suggest a fairly modest level of institutional and societal change, at least initially (Hawken, 2007; Senge, Smith, Kruschwitz, Laur, & Schley, 2008; Hart, 2010).

The best framework for choosing among these models as a starting point for exploring ways finance teaching and research can support a more sustainable world is not immediately obvious, at least not to us. In lieu, then, of an approach based on an over-arching concept of the emerging organizational and societal future, this article will take four bites out of this very juicy but perhaps bitter-sweet apple by: 1) examining one of finance's basic assumptions, 2) exploring finance's roles in business and other organizations as they currently exist and as they may be changing, 3) noting the emerging finance leadership in business and other institutions, and 4) reviewing the ways finance teaching is evolving in some business schools, including new global-sustainability-focused ones.

The Opportunity to Examine a Basic Assumption of Finance

"Examining or not examining our basic assumptions" is one of the perennial themes of economics (Friedman, 1953; Nagel, 1963; Crotty, 2011) and is surely appropriate for a discipline like finance which has so many of its foundational roots in economics. Many of its conclusions are influenced—if not fully determined—by the assumptions on which its analyses are based, and with such a large impact on how other business disciplines conceptualize and go about their endeavors. The assumption made in finance theory and teaching that *the* purpose of the firm is to maximize shareholder wealth (as discussed in the first paper in this

series) has, of course, been heavily criticized by many commentators outside finance (e.g., Freeman, 1984; Stout, 2012; Jones & Felps, 2013). Others ask for clarity of thought; Dembinski, for example, approaches the issue from a business ethics perspective, pointing out that all business and economic theories are based on moral judgments, and urges us to make those judgments explicit so they can be critically evaluated (Dembinski, 2011). Criticism has even been voiced by such business leaders as Jack Welch (Guerrera, 2009) and in the sacrosanct precincts of *Forbes Magazine*, a mainstream business publication that has long labeled itself a "capitalist tool" (Denning, 2013). The title of Denning's essay, "The Origin of 'The World's Dumbest Idea': Milton Friedman," suggests how strongly some of these criticisms are being voiced.

One premise of these first two articles of the *Journal*, and of the third proposed article, is that many and perhaps most finance professors would agree that the goal of all organizations—business and non-business, for-profit and not-for-profit—should be to contribute to society in some manner or other. Each should exist to provide some benefit, even though different organizations can do so in different ways.

A second premise of these three articles is that finance professors have many rich and exciting opportunities to contribute toward creating a more sustainable world. Among these is the chance to explore the value, implications, and appropriateness of finance education's basic assumptions about how to create and sustain organizations that contribute to society 1) in the world that produced those assumptions, 2) in the changing world of today, and 3) in the possible worlds of tomorrow.

Contributions to society can be made in many ways, but it is convenient and useful to group them into three broad categories:

1. Contributions that create economic, social, and financial value: production of goods and services at the lowest possible cost for as many people as possible, provision of meaningful employment for as many people as possible, creation of the greatest amount of financial wealth, etc.

2. Contributions that preserve and enhance the physical environment: improvements in air quality, increases in the supply of fresh water, amelioration of climate change and associated severe weather events, eradication of diseases, prevention of species extinctions, etc.

3. Contributions that increase social justice and inclusion: reduction of hunger and poverty, elimination of the exploitation of people including child labor and human trafficking, increased access to education and health care, decline in discrimination and prejudice, etc.

Since the time of Adam Smith, it has been assumed that the contributions of for-profit business lay only in the economic realm, an assumption that remained most likely a reasonable one many years thereafter. The early businesses of the Industrial Revolution that Smith studied were tiny, and each on its own was unable to make significant contributions or do much harm to the environment or to social justice. In such a world, a business goal focused only on economic performance made sense. As Smith so eloquently and memorably put it:

> every individual ... generally ... neither intends to promote the public interest, nor knows how much he is promoting it.... He intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention.... By pursuing his own interest he frequently promotes that of society more effectually than when he really intends to promote it. (Smith, 1776: Book IV, Chapter II, paragraph 9)[1]

The current finance paradigm, that the goal of for-profit businesses should be to maximize the wealth of its owners, is the modern evolution of Smith's argument, and those who staunchly support it do so from the point of view that maximizing economic value is still *the way* for these organizations to make their maximum contribution to society. Those who accept this perspective as the definitive answer to the question of "what is the purpose of business?" rarely if ever explore the implications of the word "frequently" in Smith's observation.

However, we now live in a very different world, a world of big corporations many of which have a significant impact on the environment and on society. The largest of these companies rival governments in their power and scope: the world's five largest corporations reported revenues

[1]This passage from the *Wealth of Nations* appears within a chapter devoted to domestic versus foreign investment, and not (as many assume) within a chapter devoted to the functioning of markets. It is in Book I, Chapter VII, rather, that Smith discusses supply and demand and how what he refers to as commodities markets tend toward an equilibrium that aligns individual self-interest with the maximum welfare for society. Nevertheless, subsequent economists have found the passage so powerful that they have applied it in the way it is most commonly used today (see, for example, Basu, 2010; Friedman & Friedman, 1979; Klein, 2009).

for their fiscal year ending in 2015 greater than the 2015 GDP of all but 41 countries (Forbes Global 2000, 2015; International Monetary Fund, 2016). Unfortunately, these organizations' sole pursuit of economic value is often accompanied by damage to the environment; to the lives and well-being of their employees, customers, and communities; and to the fabric of society. Even today's smaller businesses, like their large brethren, often ignore the damage they cause in their pursuit only of profits.

If the damage to the environment and society caused by businesses pursuing the current finance paradigm were insignificant, it might be argued that the immense economic success of these companies makes such damages tolerable, that they are unfortunate but acceptable side-effects that might be addressed by governments or charities. However, this is no longer the case, making it vital that finance professors, based on the inappropriateness of just this one assumption, take a fresh and creative look at the long accepted finance paradigm and determine to what extent it needs to be modified or perhaps even replaced. One very simple starting point might be to focus on Smith's exact wording and ask when "frequently" is or is not an appropriate descriptor of the impact of business actions on the interests "of society."

In the course of re-examining the paradigmatic implications of this one assumption, finance scholars are likely to be called to reconsider the appropriateness and implications of other assumptions that create the foundation stones of the finance paradigm. Some other promising candidates for re-examination might be found among the assumptions noted in the first article in this series (Werner & Stoner, 2015). Indeed, such re-examinations have already begun and are likely to increase in volume and impact. Examples are Lynn Stout's argument that shareholders are only that and not legal owners of the corporation (Stout, 2012), John Fullerton's white paper drawing the connection between finance theory and how natural systems regenerate and strengthen themselves (Fullerton, 2015), and our own work on how the assumptions underlying the Shareholder Wealth Maximization finance paradigm are either far too simplistic, hence unrealistic, or inappropriate for the present time (Werner & Stoner, 2017).

A Framework for Exploring Finance's Contribution Opportunities

Many frameworks for exploring ways finance teaching and research can support a more sustainable world are possible, and the theme of many of them might use words that are consistent with John Ehrenfeld's writings on sustainability: a socially just world in which "all species can flourish forever" (Ehrenfeld, 2008; Ehrenfeld & Hoffman, 2013).

Along the same lines, the goal of achieving a sustainable world could be pursued using a definition of global sustainability like the one in this journal's first issue: "a process that meets the needs of the present generation while enhancing the ability of future generations to meet their own needs. Global sustainability envisions a world that works for everyone with no one left out" (Stoner, 2013).[2] However, while it may be possible to achieve a reasonable level of agreement on a very broad statement about the new, sustainable world to be sought after, agreeing on the details of that world and how the transformation of finance teaching and research can help us get there is likely to be a much more challenging task.

For business schools, a particularly challenging framing and action issue occurs in the domain of time horizons. Are we to educate our students to work in the world as it currently is? Or to work in the world as we think it needs to become? Or to be active agents in moving the world from what it now is toward what it needs to become? It is obvious that the ambiguity, perhaps inherent unknowability, of the details of what the world needs to become does not make this time horizon issue any simpler.

One possible approach to this exploration might be to build upon the Business as Usual (BAU), Amended Business as Usual (ABAU), and Not Business as Usual (NBAU) frameworks described in the first article in this series and used in various versions by many other authors (e.g., Adler, 2008; Stubbs, 2010; Institute B, 2014). Business as Usual is the current dominant business paradigm built upon the assumption that Shareholder Wealth Maximization should be the goal of the for-profit business firm. Amended Business as Usual also seeks to maximize shareholder wealth, but it emphasizes ways to increase profits and do less harm to the environment and society by identifying and acting on profitable opportunities to respond to environmental and social ills. Not Business as Usual refers to a transformation of the business paradigm into one that will contribute toward, and ultimately create, a sustainable world. Such framings might suggest that finance and other professors need to explore,

[2]The first part of this "definition" is a modified version of the definition of sustainable development from "Our Common Future," the 1987 report of the United Nations World Commission on Environment and Development, commonly known as the Brundtland Commission after its chairperson, Gro Haarlem Brundtland (United Nations, 1987). It goes further than the Brundtland definition in that while the latter calls for not "compromising the ability of future generations to meet their own needs," i.e., not making things worse, this statement calls for improving the well-being of future generations. The second part of this "definition" then addresses the issue of social justice and inclusion, a concern not explicitly part of the Brundtland definition.

research, and teach students how to contribute to, and thrive personally and professionally in, all three domains: present, transition, and ultimate future. A major component, therefore, of the related research would be the discovery, development, and implementation of financial tools and change processes needed to move toward, and manage in, each of these state-of-the-world realms.

The World of Business as Usual. Companies and employees living in their own BAU world are ignoring more sustainable ways of conducting their operations or are somewhat passively pursuing sustainability initiatives only when it is demonstrably profitable to do so, and all while still performing existing profit and net present value analyses and fully honoring rate of return hurdles. When it can be demonstrated that investments and changes in procedures directly and substantially "improve the bottom line," those activities will be carried out, although not always. In his book *Getting Green Done*, Auden Schendler cites some examples where demonstrably superior financial options based on more sustainable actions were still not taken for a variety of seemingly strange and not very substantive reasons (Schendler, 2009).

The reluctance of managers to pick the "low hanging fruit" of sustainability initiatives as noted in Schendler's examples is consistent with the David B. Gleicher model of change. This model suggests when change occurs and when it does not occur, and is expressed as follows (with a slight amending of the letters but not the concepts used):

$$C = D \times V \times P > X$$

Change (C) is likely to occur when the energies associated with dissatisfaction with the *status quo* (D) multiplied by a vision of a preferred state (V) and multiplied by practical first steps to move toward that vision (P) generate enough energy for change to overcome the cost of change (X) (Stoner, 1982; Beckhard & Harris, 1987; Dannemiller & Jacobs, 1992). And, as Gleicher often observed, the really significant costs of change are very frequently the psychological costs of giving up old habits, or the taking of risks to try new things, or perhaps the psychological and egotistical pain of recognizing that we have worked for long periods of time *to get better and better at doing what should not be done at all.*

Current finance teaching to a large extent provides students with the tools and ways of thinking to contribute and to do well in a BAU world. That teaching, of course, is not likely to alert them to financial opportunities available from picking the low hanging fruit that can be revealed by knowing and understanding the very basic sustainability-consistent concepts that are useful in financial analysis and decision-

making. Those concepts and tools include life-cycle assessment (LCA) (SAIC, 2006), tunneling through the cost barrier (Hawken et al., 1999), biomimicry for design and operations (Benyus, 1997; Vierra, 2014), cradle-to-cradle design (C2C) (McDonough & Braungart, 2002), design for sustainability (D4S) (UNEP, 2009), and carbon footprint measuring methods such as the ones from The Nature Conservancy (The Nature Conservancy, n.d.), the Rocky Mountain Institute (RMI, 2009), and state and national environmental protection agencies (e.g., U.S. EPA, n.d.).

In the same vein, traditional finance teaching may also not provide knowledge of sustainability-related financial markets and instruments available to firms as well as of non-financial metrics used by investors and rating agencies to assess the market value of companies' own shares and financial obligations and thus their cost of capital. Looking ahead, traditional finance teaching may well be slow in addressing the financial and strategic impacts on companies of possible future carbon taxes, carbon cap-and-trade regulations, the growth of carbon emission markets, the financial implications of technological advances in wind and solar energy, and growing governmental support for moving toward a carbon-free world.

Various aspects of financial market instruments like carbon offset certificates and programs for carbon taxes and cap-and-trade systems are currently in various stages of exploration, evolution, and controversy in many countries (e.g., CBO, 2013; Smith, 2014; Wettestad & Jevnaker, 2015; Australian Government, 2014). These evolving programs and instruments may come to play an increasing role in future financial decision-making and certainly offer interesting research opportunities for faculty members in finance and other fields. Investors' decisions are already being influenced (U.S. SIF Foundation, 2014) by the growing volume of Environmental, Social, and Governance (ESG) data available from sources such as the Global Reporting Initiative (GRI), the Institute for Research and Innovation in Sustainability (IRIS), the Global Sustainable Investment Alliance (GSIA), the Bloomberg Professional Service, MSCI, IW Financial, and the Sustainability Accounting Standards Board (SASB). These data sources are likely to become more influential in the future as climate change impacts and other environmental problems continue to increase. For instance, the continuing debate about the most effective methods to reduce atmospheric carbon levels—national legislation, cap-and-trade schemes, carbon taxes, etc.—is more likely to grow than diminish as atmospheric CO_2 levels continue their rise above the 350 ppm level, which is widely assumed to be the maximum level our planet can maintain without serious climate destabilization and enhanced global warming (e.g., 350.org, n.d.). Fortunately, the international

agreements reached at the December 2015 UN COP-21 meeting in Paris provide new motivations and opportunities for seeking solutions.

The lack of exposure to such finance-relevant tools, financial markets and instruments, and company-evaluating metrics may not seem to be an obvious career disadvantage at present in many employment situations. The career situation is changing, however, as an increasing number of firms become aware of the necessity to reap the competitive and financial advantages of understanding and using the full range of concepts, tools, markets, instruments, and metrics related to creating climate change resilience. Such company awareness seems to be growing reasonably rapidly (Ernst & Young, 2013) and is sometimes communicated by serious executives like Ben Cohen and Jerry Greenfield in a light-hearted manner, such as with the new Ben and Jerry's ice cream flavor "Save our Swirled" (Boscamp, 2015). As a result, employees who currently lack the knowledge and skills related to these concepts and tools miss opportunities to stand out as innovators before this competitive awareness comes to their companies and becomes part of employees' required basic knowledge and analytic and decision-making tool kits.

The World of Amended Business as Usual. In the ABAU world, companies and their employees engage in a somewhat aggressive pursuit of sustainability-friendly actions that pay off within the existing business paradigm, although perhaps with some mild tinkering with time horizons, hurdle rates, payback periods, etc. In these firms, financial analysis and decision-making are coming to be substantially informed by the concepts listed above, and related tools are actively being used. ABAU companies and organizations may also make minor, but perhaps useful, structural changes such as adding sustainability coordinators or departments, financial and career incentives for sustainability-related employee initiatives and accomplishments, and including some recognition of the need for global sustainability in their mission statements. However, even as they seek to do less harm in their pursuit of the traditional goals of profitability and competitive advantage, they are not undergoing the major structural, strategic, and values transformations that many observers (e.g., Korten, 2007, 2015; Klein, 2014) believe are needed throughout the business and non-business productive world. In these ABAU companies, which are growing in number because of competitive and regulatory—and in some cases even values-driven—pressures (Lovins & Cohen, 2011), it is a growing necessity for employees to possess and use finance-relevant tools and insights (e.g., CPA Canada, AICPA, & CIMA, 2013). Failure to provide these tools and concepts to students who are likely to work in companies in the ABAU world is therefore a growing disservice to them and to

their employing organizations. As a member of the audience at a Rowen University PRME meeting a few years ago recalled hearing a Honeywell V.P. say, "sustainability is embedded in the DNA of the company to such an extent that 'any institution providing us [Honeywell] with an applicant for hire had better make sure that they understand sustainability challenges or don't bother sending them'" (Weiss, 2016).

The World of Not Business as Usual. The NBAU world, in the sense of "Business for and in a Sustainable World," is a world none of us has experienced, but attempts to describe it and the productive organizations that would make it possible are being made (Dietz & O'Neill, 2013; Klein, 2014; Korten, 2015) and many more can be anticipated. In general, the planet's inability to continue yielding the growing amount of inputs required by our current ways of producing and consuming and absorb the various wastes generated thereby very compellingly suggests that the NBAU world must be a completely transformed production-distribution-consumption global society. Such a world has been called for by many commentators, not the least of whom is Pope Francis (Francis, 2015). For organizations in such a new society, finance is likely to play many of the same roles it currently plays, but it might play some of those roles in entirely different ways as well as some brand new ones.

Although this article focuses on the field of finance, opportunities for exceptional contributions are also available to professors of marketing (e.g., Bridges & Wilhelm, 2008; Schor, 2010), accounting (e.g., Bebbington, 1997; Gray & Collison, 2002), economics (e.g., Costanza, 1991; Farley & Costanza, 2002), and to faculty outside the disciplines of business. Given that all organizations, not just for-profit businesses, are likely to undergo very deep changes, bringing such a world into being is arguably one of the greatest challenges ever presented to our species, and certainly among the most exciting ever brought to those who reside in academia. In this vein, predicting what that world will be like and preparing individuals and organizations to create and work in such a world may well be the greatest and potentially most exciting intellectual adventure finance professors and professors in all disciplines have ever had the opportunity to undertake. All academic fields, such as political science (e.g., Park, Conca, & Finger, 2008; Meadowcroft, 2011), sociology (e.g., Passerini, 1998; Burns, 2012), psychology (e.g., Schmuck & Schultz, 2002; Myers, 2013; Jaipal, 2014), and the arts (e.g., Harden, 2012; Canavan & Robinson, 2014), among others, are likely to have significant contributions to make in this transformation.

The greatest challenge in making the kind of transformation that we need to make most probably comes from the fact that nobody can know for sure what NBAU will and should eventually look like, or how to get

there. At least four factors significantly complicate this situation: 1) there are very well-established business and economic models and methods in place in the BAU world, 2) all aspects and players in that world exist in a coherent, integrated, mutually supportive, self-reinforcing, and ongoing global system, 3) rewards at work and careers are based on doing well in the BAU world, and 4) there is very little career and institutional incentive for academics to think and act outside the box and great career risks in doing so.

There is, unfortunately, a fifth factor that needs to be noted: the systematic and tragically effective if misguided and selfish efforts of individuals and organizations in the United States to deny the realities and seriousness of the unsustainability of our current ways of being in the world (Krugman, 2006; Anderegg, Prall, Harold, & Schneider, 2010; Oreskes & Conway, 2010; Washington & Cook, 2011; Merchants of Doubt, 2015; Exxonsecrets.org, n.d.). Fortunately, it seems that some of the groups that have long been misled on this issue are beginning to recognize the need for constructive action (e.g., Paulson, 2014). Hopefully the actors promoting, funding, and sponsoring these systematic attempts to prevent or at least delay concerted actions to "heal this broken world" will eventually diminish and fade away entirely.

The Evolving Finance Leadership in Businesses and Other Institutions

There are many changes occurring in business and economics that can alert professors in finance and other disciplines to the need to rethink what they have traditionally researched and taught, and to the opportunities for them in doing so. Such signals of change are occurring all around us: the rising availability of environmental, social, and governance data and its increasing use in investment and business decisions; the shocking rise of global income inequality (especially in the United States) and its implications for social unrest and maybe even revolution (Piketty, 2013); the growth of full cost accounting, with increasing use of information about and reporting on traditionally ignored externalities; the growth of "impact investing" and the increase in funds flowing to "green-type" companies and investment funds; the likelihood that the set of World Bank institutions will be changing its priorities much more toward creating a more sustainable and socially just world, etc. Indeed, many of these changes can most easily and concretely be glimpsed by looking at how specific institutions are responding to the forces of change. Moreover, it is often the case that advances in business practice precede the incorporation of these concepts in business school curricula. Finance professors can thus look to many individuals and organizations outside the academy for ideas and initiatives that can help transform how finance may come to be practiced in the future

or how it is already being changed. Many of these institutions in fact welcome finance professors and professionals as active partners in their explorations.

The Aspen Institute. A promising source of ideas and resources for finance professors who are looking for ways to transform their teaching is the Aspen Institute's Business and Society Program (http://www.aspeninstitute.org/policy-work/business-society), the mission of which is to "Align Business with the Long-term-Health of Society" by incorporating sustainability and values-based leadership into business practice. A part of the program is the Aspen Center for Business Education which collects data and recognizes innovative research, courses, programs, and educators addressing change in business education. Until 2016, the program also ran CasePlace.org, a repository of teaching materials that included case studies and syllabi on finance and global sustainability. The future availability of that repository was under consideration as this article was being completed.

B-Lab and the B-Corporation Movement. For finance professors who are seeking opportunities to be leaders in a new domain of finance research and teaching, the growing movement that allows companies to register themselves as "Benefit Corporations" may be a very interesting phenomenon to explore. The not-for-profit organization B-Lab (https://www.bcorporation.net) has created a framework that enables for-profit corporations to define their purpose, explicitly and legally, as going beyond shareholder value maximization to include a commitment to solve social and/or economic problems, that is, to "redefine success in business"[3] (B-Corporation, 2016).

There are three initiatives within B-Lab: 1) lobby governments to pass legislation permitting the creation of "benefit corporations" or "B-Corps" and provide legal protection for these businesses to pursue non-financial objectives along with, or instead of only, financial goals; 2) minimize false claims of social and environmental purpose by identifying companies

[3]Some legal scholars argue that there is nothing in current U.S. corporation law requiring for-profit corporations to pursue shareholder wealth maximization (SWM) as their primary or only purpose. Rather, they point out that the standard text of state corporation laws in the U.S., including in Delaware—seen as the most important state for corporate law and its judicial interpretation, does not require SWM but simply permits the corporation to engage in any lawful act. So, while these scholars might see the B-Corporation movement as an important way to support non-financial corporate goals and bring these companies and data about them to the attention of the broader public, they consider the notion of the B-Corp as legally unnecessary (Sneirson, 2009; Stout, 2012).

that meet the environmental and social performance, accountability, and transparency standards of B-Lab, and by acknowledging them as "Certified B-Corporations," and 3) create a database for benchmarking social and environmental performance and a "B-Analytics" platform for accessing it.

In mid-2016, B-Lab reported 1) that thirty U.S. states and the District of Columbia had passed B-Corp legislation, 2) that more than 1,750 corporations from 50 countries and 130 industries had been certified, and 3) that the B-Analytics database, containing information from more than 1,100 companies, was in wide use within the professional investment community (B-Corporation, 2016).

Beyond the data in B-Analytics, B-Lab also has a list of B-Corps available on its website, as well as a blog, videos, and annual reports, all of which might be useful to finance professors, plus a jobs-board which should be of interest to finance students.

Patagonia. The outdoor apparel manufacturer Patagonia, one of the most successful B-Corporations, is a model of a company whose corporate goal transcends financial value. Its mission statement is to "build the best product, cause no unnecessary harm, [and] use business to inspire and implement solutions to the environmental crisis." Patagonia's employees consistently donate their time while the company donates its services—and at least 1% of its sales revenues—to "hundreds of grassroots environmental groups all over the world who work to help reverse the steep decline in the overall environmental health of our planet" (Patagonia, 2016).

Contrary to the take-make-waste philosophy of so many companies that are happy to see their products become obsolete so they can sell and profit from replacements, Patagonia prides itself on the longevity of its products. Their "Worn Wear Tour" sends a biodiesel repair truck throughout the United States where they repair, and teach customers how to repair, damaged Patagonia products free of charge. They also accept used clothing on consignment in their Portland, Oregon store, and pay one-half of the sales price to the consignor once the item is sold.

Patagonia's sustainability-related efforts include initiatives involving fabrics, clothing manufacturing, transparency, and food. The company works with fabric mills to reduce negative environmental and social impacts and with clothing factories to promote fair labor practices and ensure good working conditions; such activities are described in "The Footprint Chronicles" (Patagonia a, n.d.). The company focuses on making its supply chain as transparent as possible to identify and reduce

any harmful environmental effects. Patagonia also has a subsidiary called "Patagonia Provisions" (Patagonia b, n.d.) which addresses environmental issues in the food industry.

Ray Anderson and Interface. Among corporate initiatives to transform large, successful, and complex industrial organizations into globally sustainable institutions, that led by Ray Anderson until his recent and widely mourned death in 2011 was probably the best known of all. At a time when so much anger and contempt had been aimed at the personal greed of, and social and environmental harm caused by, too many CEOs and other corporate leaders (e.g., Krugman, 2006; Ratley, 2014; Buchheit, 2013), Ray Anderson, like Patagonia founder Yvon Chouinard, was one of those corporate leaders who became widely respected and admired for their commitments and actions to create a more sustainable world. The gradual evolution of Interface's financial metrics and decision-making processes are hinted at in Anderson's three books (Anderson, 1998, 2009; Anderson & White, 2011) and information on their further growth is likely to be widely shared by his successors as they continue to "climb Mount Sustainability."

Bloomberg L.P. Bloomberg L.P. has been a leader in corporate sustainability efforts, targeting energy use, renewable energy sources, LEED certified office space, and diversity in its workforce. The company has been committed since 2007 to "help prove the 'business case for sustainability' by integrating finance into sustainability and sustainability into finance" (Bloomberg, 2014). As such, one of their initiatives going forward is to achieve a 20% reduction in absolute carbon emissions while simultaneously achieving a 20% internal rate of return on their sustainability investments by 2020 (Bloomberg, 2015).

The ESG sustainability metrics available on the Bloomberg Professional Service are fully integrated with company financial data and are reported to be widely used by financial analysts to study and understand the impact of ESG issues on traditional financial valuation (Bloomberg Professional Services, n.d.). In mid-2016, the Service contained ESG data on more than 11,300 companies worldwide as well as executive compensation data from over 16,000 companies in 69 countries, with such data being used by more than 12,000 of their clients (Bloomberg, 2016). Finance professors teaching investment analysis will find this service to be an important source of data as well as one that provides insightful guidance on the building of valuation models.

Many of Michael Bloomberg's personal initiatives during his twelve years as mayor of New York City were also aimed at contributing to a more sustainable world, as have similar activities by his media company,

Bloomberg L.P., and foundation, Bloomberg Philanthropies. As New York City mayor, Bloomberg launched a comprehensive city-wide sustainability initiative, PlaNYC 2030, with the goal of making New York the greenest city in America. The plan paid particular attention to energy usage and carbon emissions, and served as a roadmap to assist companies doing business in New York to become more efficient.

The U.S. Military. In a 2015 report to the U.S. Congress, the U.S. Department of Defense (DOD) concluded that "climate change is a security risk" and that "global climate change will have wide-ranging implications for U.S. national security interests over the foreseeable future" (U.S. DOD, 2015). Indeed, the DOD for some years has been applying sustainability concepts and tools in powerful ways that will be of interest and value to finance professors and their students, using concepts like tunneling through the cost barrier (Hawken et al., 1999), for example, in making investment and building design decisions.

Both the U.S. Navy and Army have also used sustainability-informed financial analyses to guide their decisions on resource allocations and commitments to alternative energy investments. The Navy's assessment of the impact of climate change on the vulnerability of coastal military installations, which is being used to guide policy level decisions on how to protect those facilities (SERDP, 2013b), noted that "climate-related effects are already being observed at Department of Defense (DoD) installations in every region of the United States and its coastal waters" (SERDP, 2013a). For the Army, decisions in support of aggressive initiatives to develop alternative energy sources such as solar power were guided by analyses like the estimated fully-burdened financial (US$400 dollars per gallon) and casualty costs of delivering fuel to some remote locations in Afghanistan (Tiron, 2009).

The Capital Institute. Located in Greenwich, Connecticut, the Capital Institute is just one of a number of private organizations, usually not-for-profit, that are aggressively seeking ideas and approaches for dealing with what they see as fundamental flaws in the BAU model of business and in the currently dominant shareholder wealth maximization paradigm. The Institute was founded and is led by John Fullerton, an impact investor and a former Managing Director at JPMorgan where he managed capital markets and derivatives units. He was also the Chief Investment Officer of LabMorgan, the bank's high-tech, private investment vehicle. In 2014, Fullerton was elected to full membership in the Club of Rome, a widely respected informal global association of

100 thought leaders who "share a common concern for the future of humanity and the planet" (Club of Rome, 2016a).[4]

Given its roots in very successful ventures in the for-profit finance community as well as the broad financial expertise of its key members both in traditional financial value-maximizing activities and the emerging finance for a sustainable world, the Capital Institute's papers and programs—especially Fullerton's blog titled "The Future of Finance," available on the Institute's website, www.capitalinstitute.org—may be of particular interest and value to finance professors.

The Not-for-Profit Community. If cooperatives and social enterprises continue to increase in number and expand their roles in producing goods and services, as some predict they will (e.g., Kim & Bradach, 2012; Bernasek, 2014), they will likely continue and broaden their use of sustainability-focused financial tools and metrics in their operations. More importantly for finance professors, the nature of their missions may also lead them to explore and develop new sustainability tools and metrics and find innovative ways to use existing ones. One example of such tools that not-for-profits are likely to investigate is the IRIS set of "generally-accepted performance metrics that leading impact investors use to measure the social, environmental, and financial performance of their investments" (IRIS, n.d.). Acumen, the not-for-profit organization pioneering entrepreneurial approaches that address global poverty, develops and uses tools with a similar objective (Dichter, 2014).

The Humanistic Management Network and others. The Humanistic Management Network (HMN), which applied to the Academy of Management for Interest Group status in 2013, is one of many organizations and networks that are exploring ways in which the global production-distribution-consumption system needs to evolve to create a sustainable world. Other such organizations include The Evolution Institute, The New Economy Coalition, the Presencing Institute, and the related U.Lab initiative. As these organizations push forward with their intellectual and action-focused agendas, finance professors can look to them for information on, and ideas about, how finance practices are evolving and need to evolve as companies align themselves with the

[4]In 2016, the Club of Rome launched an initiative to change economics education called "Reclaim Economics" because of their concern that "today's economic system is failing us. It is the cause of climate change, resource destruction and rising inequality. The idea that the free market works for everyone is a fantasy." The goal was "to inspire and support students, activists, intellectuals, artists, video-makers, teachers, professors and many others to help us shift the teaching of economics away from the mathematical pseudo-science it has become" (Club of Rome, 2016b).

need for a sustainable world. One of HMN's and other organizations' major themes directly relevant to finance teaching and research, for example, is the measurement of societal and organizational success and contribution. Beyond the well-known "Triple Bottom Line" (Elkington, 1997), metrics that focus on contributions to human and environmental well-being (such as Bhutan's GNH or Gross National Happiness; see Gnhcentrebhutan, 2016) are being explored as possible replacements for traditional ones such as Gross National Product and corporate profits. Finance professors of course need not restrict their role in these inquiries to that of purely passive observers—both professional opportunity and the chance to contribute to society invite them to be leaders in such pursuits.

The Fowler Center for Business as an Agent of World Benefit. Another promising source of ideas and possible examples of transformational finance in the for-profit sector and in innovative new social enterprises, the Fowler Center applies the greatly respected appreciative inquiry approach to organizational and societal transformation in much of its work. It is at present conducting a major study of "how the business sector is putting its people, imagination and assets to work for the benefit of humanity" (Fowler Center, n.d.). The Center also integrates the appreciative inquiry approach with the sustainable value framework (Hart & Milstein, 2003; Laszlo, 2008) and the concept of flourishing (Ehrenfeld, 2008 and others). As such, innovations in financial management and perhaps in fundamental levels of organizational transformation that are of interest to finance professors may emerge as the Center's work progresses and evolves.

The Investment Integration Project. The Investment Integration Project (TIIP) aids institutional investors in seeing the relationship of the returns and risks of their investment decisions with natural, social, and economic systems. As was made clear during the financial crisis of the last decade, systemic risks can have a severe impact on financial value and the well-being of society. TIIP's vision, therefore, is "a world in which institutional investors recognize the influence of their investment decisions on the earth's systems, and therefore intentionally make those decisions with the realization that healthy portfolio returns are not possible without healthy systems" (The Investment Integration Project, n.d.; see http://tiiproject.com/about/). The resources offered by TIIP can be useful and important additions to courses in investment analysis and portfolio management as well as to the research agendas of finance professors.

The Evolving Finance Teaching in Business Schools

As finance professors who recognize the importance of incorporating sustainability into their courses and programs seek out examples and models of what such innovations might look like, they can turn to a growing number of progressive schools that have been actively transforming the way they teach finance and the other business disciplines. Schools that are leaders in incorporating sustainability into their degree programs are an excellent place to look for guidance as they all have one or more courses in sustainability-related finance within their curricula.

Schools and Programs Whose Focus is Sustainability. The 21st century has seen the emergence of schools that have committed their educational efforts to sustainability. One of the first was the Bainbridge Graduate Institute (BGI) within Pinchot University in Washington State. BGI offered MBA degrees in Sustainable Business and Sustainable Systems. In 2016, Pinchot University and BGI were acquired by the Presidio Graduate School of Management in San Francisco, California, another pioneering school focused on global sustainability. Presidio offers both an MBA and an MPA in Sustainable Management (https://www.presidio.edu/).

Schools with Sustainability Degrees. Other schools which are not specifically focused on sustainability have created sustainability degree programs. Examples of these are

- Bard College in Annandale, New York, which offers an MBA in Sustainability at its New York City campus (www.bard.edu/mba);
- Brandeis University in Waltham, Massachusetts, which offers an MA in Sustainable International Development (http://heller.brandeis.edu/sustainable-international-development/index.html);
- Duquesne University in Pittsburgh, Pennsylvania, which offers an MBA in Sustainability (http://mba.sustainability.duq.edu);
- Marylhurst University in Marylhurst, Oregon, which offers an online MBA in Sustainable Business (https://www.marylhurst.edu/degrees-and-programs/masters-degrees/mba-sustainable-business/);

- the University of Exeter in the UK, which offers their "One Planet MBA" (http://business-school.exeter.ac.uk/mbaatexeter/oneplanetmba/oneplanetmbaprogramme);

- the University of Michigan in Ann Arbor, Michigan, which offers an MBA/MS in Sustainability through its ERB Institute and School of Natural Resources and Environment (http://erb.umich.edu/education-programs/mbams/); and

- the University of Vermont, which offers a "Sustainability Entrepreneurship MBA" (http://catalogue.uvm.edu/graduate/businessadmin/businessadministrationmba/).

Schools with Sustainability Majors and/or Minors. Still other schools have developed a sufficient number of sustainability-related courses to offer a major or minor in sustainability or other related topic without creating full-blown degree programs in sustainability. Examples of these are

- the Questrom School of Business of Boston University in Boston, Massachusetts, which offers a concentration in Energy and Environmental Sustainability within its MBA program (http://questromworld.bu.edu/gpo/mba-program/concentrations/ees-concentration/);

- the Tepper School of Business at Carnegie Mellon University in Pittsburgh, Pennsylvania, which offers a concentration in "Ethics and Social Responsibility" within its MBA program (http://www.tepper.cmu.edu/mba/mba-curriculum/concentrations/index.aspx);

- Clark University in Worcester, Massachusetts, which offers a concentration in sustainability within its MBA program (http://www.clarku.edu/gsom/graduate/fulltime/concentrations.cfm);

- Fordham University in New York City, which offers a concentration in "Social Innovation" and a minor in "Sustainable Business" to its undergraduates (http://www.fordham.edu/info/24491/majors_concentrations_and_minors/3057/sustainable_business); and

- the Keenan-Flagler School at the University of North Carolina, which offers a concentration in Sustainable

Enterprise within its MBA program (http://www.kenan-flagler.unc.edu/sustainable-enterprise/education/mba-concentration).

Sustainability-Focused Finance Courses. Some individual faculty members in finance have developed courses on sustainability, often in schools that are not yet committed to including sustainability in their degree programs in a systematic manner. One place to search for such courses is the Aspen Institute's CasePlace.org database as mentioned above. The authors of this article have also developed a course titled "Sustainability and Finance" that has been offered in the MBA program at Fordham University's Gabelli School of Business since 2007, as well as a parallel upper-level undergraduate course that has been offered since 2013 and which may be taken as a stand-alone elective, as part of the undergraduate concentration in Social Innovation, or as part of the minor in Sustainable Business. Other examples include the sustainability-focused finance courses offered by Columbia University's School of Professional Studies, including "Sustainable Finance," "Financing the Green Economy," and "ESG Investing and Responsible Investment Practices" (which do lead to a certification of Professional Achievement in Sustainable Finance); Duke University's courses in "Energy Finance" and "Water Resources, Finance, and Planning"; and the University of Washington's course titled "Finance and Accounting from a Sustainability Perspective."

NOW WHAT? SPECIAL OPPORTUNITIES FOR FAITH-ENABLED BUSINESS SCHOOLS—AND THE VERY SPECIAL OPPORTUNITY FOR JESUIT BUSINESS SCHOOLS

As unfortunate as it may be that so many business schools are not actively challenging the assumption that firms serve society best when their focus is on enriching their owners and with no other obligation than to obey laws and regulations (which they often help create to serve their own interests in the first place), such a stance is particularly upsetting when it occurs on the campuses and in the classrooms of faith-enabled universities and business schools.

Faith-enabled schools by their very nature embody the values of acting responsibly and of serving community and society. Engaging in an active inquiry, therefore, into how the current goals and activities of businesses often damage society and the environment, and how these goals and activities, if changed, might instead contribute to global sustainability, should fit well with their mission-vision statements, and

perhaps much more so compared to their non-faith-enabled peers. Such an inquiry would provide intellectual challenges far beyond those offered by routine teaching, and could empower faculty, students, administrators, and staff alike to discover new opportunities for major contributions both to themselves and to society at large.

While the mission statements of almost all faith-enabled universities and business schools provide ample justification for those institutions to act on opportunities for both educational and societal contribution and leadership toward a more sustainable world, the call to do so is particularly clear for Jesuit business schools, and their opportunity to contribute on a global scale is exceptional. At least nine things make this call particularly clear and urgent. Some are quite recent, and some have long been in place. They include 1) the recent invitations to action in Pope Francis's 2015 encyclical on the environment, *Laudato Si'*; 2) the very similar invitations in the 2012 Jesuit Task Force Report on Ecology, *Healing a Broken World*; 3) the long-standing entreaty for just action and teaching implicit in the wisdom and beauty of Roman Catholic Social Teaching; 4) the American College and University Presidents' Climate Commitment (ACUPCC); 5) the Principles for Responsible Management Education (PRME); and, very importantly, 6) the Jesuit universities' espoused missions. Moreover, the opportunities for Jesuit business schools to make exceptional contributions arise from 7) the sheer size and global breadth of the IAJBS network of member schools and other organizations, which collectively gives them the opportunity to pioneer the transformation of business education from part of the problem of global unsustainability to part of the solution; 8) the visibility and staying power of the IAJBS World Forum's very unusual commitment to make leadership for global sustainability its annual conference theme for 10 years; and 9) the opportunity to make the bold, visible, and very symbolic act of adding a fourth Jesuit education-foundation-stone, one calling for care of our created world, to the centuries-old original three: *cura personalis*, *homines pro aliis*, and *magis*. Taken together, these factors create a particular urgency, justification, and excitement for IAJBS member schools to do what all business schools are called to do: provide a business education that serves humanity and all species in this and all future generations.

Laudato Si'. The recent papal encyclical, *Laudato Si'*, is clear and explicit in its call to engage in dialogue and to take action to avert the worst of the unfolding tragedies already arising from climate change and global unsustainability. It is a call addressed not just to Roman Catholics or even just to Christians but to all the world. It is also one that is especially poignant and compelling for members of Jesuit universities—we really are being called to take our existing commitments to creating

a sustainable world to an entirely new and higher level, and to seize the opportunity to provide global leadership as we do so.

Healing a Broken World. The Jesuit Task Force Report on Ecology, *Healing a Broken World*, invites the entire Jesuit community to add care for God's creation to all aspects of its work and way of being in the world. This invitation calls for positive actions beginning at the time of entry into the order (formation) and continues for all aspects of the order's contributions to global well-being. The report thus contains eight recommendations for making the commitment to global sustainability visible, powerful, and a daily reality. Prominent among these recommendations for business schools are the gently but compellingly couched "invitations" for "Jesuit higher education institutions—business schools (and) research and capacity-building centers—to engage students in transformative education and to explore new themes and areas of interdisciplinary research," and to "develop curricula that address sustainability issues and impart a certain level of environmental literacy" (Promotio Iustitiae, 2011).

Roman Catholic Social Teaching. The year 2016 was celebrated as the 125th anniversary of Pope Leo XIII's encyclical *Rerum Novarum*, which is considered to be the founding document and stimulus for succeeding treatises and encyclicals that make up the set of principles and themes intended to guide decisions and behavior with respect to social justice. As identified by the United States Conference of Catholic Bishops, the seven themes of Roman Catholic Social Teaching constitute a strong call to commitment and action in upholding social justice and creating a sustainable/flourishing future. These are 1) the sanctity of human life and dignity of the person; 2) a call to family, community, and participation, as well as to the pursuit of the common good; 3) social justice; 4) care for the poor and vulnerable; 5) the dignity of work; 6) solidarity and the universal destiny of the goods of the Earth; and 7) care for God's creation (United States Conference of Catholic Bishops, n.d.).

Adherents of all faith traditions and many who do not profess any religious faith accept, in many respects, most of these tenets of Roman Catholic Social Teaching—particularly the calls for dignity, community, pursuit of the common good, and care for the physical environment. Such teaching can thus serve as a guide for many finance executives and academics—as well as for those in other business disciplines—as they grapple with how to move toward greater sustainability. One particularly powerful document that is universal in application, for example, and which can advance the thinking of those who are seeking to go beyond Business As Usual, is the "reflection" of the Pontifical Council for Justice and Peace titled "Vocation of the Business Leader." It urges businesspeople

not to separate their beliefs about their responsibilities to humanity from their beliefs about their responsibilities to their work, and gives guidance to help business leaders keep their focus on

> - producing goods and services that meet genuine human needs while taking responsibility for the social and environmental costs of production, of the supply chain and distribution chain;…
>
> - organising productive and meaningful work, recognising the *human dignity* of employees and their right and duty to flourish in their work ("work is for man" rather than "man for work"), and [on] structuring workplaces with *subsidiarity* that designs, equips and trusts employees to do their best work; and
>
> - using resources wisely to create both profit and well-being, to produce sustainable wealth and to distribute it *justly* (a just wage for employees, just prices for customers and suppliers, just taxes for the community, and just returns for owners). (Naughton & Alford, 2012)

American College and University Presidents' Climate Commitment (ACUPCC). In 2006, twelve university presidents founded the ACUPCC, a commitment to achieve climate neutrality on their campuses, integrate sustainability into their curricula and their students' educational experience, and publicly report their progress. As of mid-2016, 665 schools have made the same commitment.

The crisis of global climate change and other aspects of global unsustainability have validated the wisdom of the founding members of the ACUPCC and challenged all university and college presidents to join and act upon the organization's commitments. Nowhere is this call more valid than in the many IAJBS member institutions that have since joined the ACUPCC and in the others that have yet to join.

The Principles for Responsible Management Education (PRME). The PRME principles (UNPRME, n.d.) contain a strong call for re-aligning management education in all business schools toward contributing to a more sustainable world. Twenty-six Jesuit business schools had joined PRME by mid-2016 (UNPRME, 2016; IAJBS, 2016a, 2016b), and there are at present very ambitious initiatives underway to raise that membership total to 100%. In fact, the first executive director of the PRME Secretariat, Manuel Escudero, until recently the dean of the Deusto Business School in Bilbao, Spain, has been an active leader in the initiatives for bringing PRME to all Jesuit business schools and making it real on each campus. The present director, Jonas Haertle, has also been a strong supporter of efforts to bring PRME to all Jesuit business schools.

For faculty members and deans of Jesuit business schools who are seeking to move business school curricula from being part of the problem of global unsustainability (Porth & McCall, 2015; Werner & Stoner, 2015) to being part of the solution, *Laudato Si'*, *Healing a Broken World*, Roman Catholic Social Teaching, the ACUPCC, PRME, and other related calls to action are clear justifications for leading the way in changing what is being taught and researched. These calls also provide a potentially powerful and morally strong basis for asking presidents, deans, administrators, faculty, students, and alumni why more is not being done, and faster.

Mission. The commitment to social justice and inclusion has been a hallmark of Jesuit institutions since each was founded. As such, all the factors described above as well as the ones that follow are anchored in, and supported by, the very DNA of Jesuit university mission. And, although a deep commitment to contributing toward a more sustainable world has not been included in mission statements as rapidly as might be expected, many of the universities have taken forceful steps to communicate clearly the connection between their historical missions and the need for global sustainability. Three examples are provided by Santa Clara University, Loyola University of Chicago, and Fairfield University (a more complete enumeration of the initiatives of the various Jesuit universities and their business schools will be provided in the third article of this series).

Santa Clara's president, Michael J. Engh, S.J., proposed in his 2009 inaugural address that the University should "become a major center for discussions of environmental justice, and for examining the ethical dimensions of how we treat the physical world … (and that it) … lead in the development and promotion of practices, businesses, and technologies that will ensure a viable and just future for all" (Engh, 2009). One of the ways Santa Clara has backed up that commitment has been in its leading role in teaching, research, and action in the field of social enterprise and social entrepreneurship, a field that many see as shaping the future of productive enterprises in key ways that will contribute to a more sustainable world.

At Loyola University of Chicago (LUC), the very visible and articulate commitment to global sustainability led by Michael Garanzini while he was president, combined with the work of faculty, administrators, and university partners, created the Institute of Environmental Sustainability (IES). LUC and IES played major roles in the research and writing that led to the Jesuit Task Force Report on Ecology and the new free e-textbook, *Healing Earth* (Healing Earth, n.d.). LUC and the Institute also host a very well-attended and influential Annual Climate Change Conference.

Fairfield's president, Jeffrey P. von Arx, S.J., has played a leading role in the University's global sustainability commitment and carbon neutrality progress. Their website states that as

> a Jesuit university committed to the belief that all humans have a responsibility for all creation, Fairfield infuses sustainability throughout its departments, programs, and infrastructure. Ignatius of Loyola, founder of the Jesuits, advocated in the 16th century that humans are stewards of the Earth—not owners of it or masters of other species. To honor the dignity and worth of all creatures and living things, we, humankind, must hold ourselves accountable for the environmental crisis that we have, ourselves, created. (Fairfield University, n.d.)

IAJBS Scope and Potential Impact. The 90 Jesuit business schools around the globe and the approximately 40 other members of the IAJBS (IAJBS, 2016a, 2016b) make up what is very likely the largest body of business schools and associated institutions of its kind in the world. It is no wonder then that they have enormous potential as a group to contribute to the world (Garanzini, 2015). The scope and sheer size of this global network offer the member schools, acting together and in partnership with many other similarly committed organizations and institutions, an exceptional opportunity to contribute to the transformation of business education.

The IAJBS World Forum and Its 10-Year Commitment. The IAJBS has become a growing force in supporting and encouraging its member schools to recognize that their long-standing commitments to social justice and poverty alleviation now require leadership in the domain of global sustainability. At the 2008 World Forum at Fordham University in New York City, the possibility arose that the 2009 World Forum at XLRI in Jamshedpur might focus on global sustainability, and the next year the Forum's theme was "Leading the Way to Sustainable Development." At that 2009 World Forum, the membership passed a very unusual resolution for any annual conference: a recommendation to the Executive Board of the IAJBS and to future World Forum host institutions that the theme of the annual meetings over the next ten years would be "leadership for global sustainability"—a resolution that was promptly approved by the Executive Board at its next meeting. The following year, at Ateneo de Manila University in Manila, Philippines, the possibility of founding a new journal devoted to global sustainability was proposed by the IAJBS board chair and dean of the Ateneo business school, Rodolfo Ang, and his colleagues. Meetings of the emerging editorial board were then held in New York and at subsequent World Forums in Lima

(Universidad del Pacifico, 2011) and Barcelona (Institut Quimic de Sarriá, 2012). The first two issues of the journal appeared in 2013.

Cura personalis, homines pro aliis, magis, *and?*

Many conversations occurring within the Jesuit community and well beyond it focus on how to capture and make real some of the opportunities and calls for Jesuits and their partners to continue making even greater contributions to the world in this Anthropocene Age[5] in which we now all live. Some of these conversations, for instance, focus on how Jesuit educational institutions can continue their almost five centuries of educational leadership (Lowney, 2003). One of many such opportunities to take a large, symbolic, and potentially powerful next step up the educational leadership ladder was also noted in the editorial for volume 2, issue 1 of this *Journal*. That step would be to add a fourth foundation stone to the three that have guided the Jesuit education commitment for hundreds of years, and to make that fourth tenet as real in mission, teaching, research, and service as the other three already are.

Changing the World a Second Time

Taken together, these calls and opportunities to act on conscience and with compassion for all species and all generations place the IAJBS member schools, individually and collectively, in a position to make still another contribution on a scale comparable to the Jesuits' own initial gift to the world: the establishment of educational institutions around the globe, which led Chris Lowney to describe the Jesuits as the "the 450 year old company that changed the world" (Lowney, 2003). Almost five centuries after those first steps, Jesuit business schools are called once again to take a leadership role in transforming the world, and they are exceptionally well-placed, perhaps uniquely well-placed, to do so—this time to transform business education (and business practice) from being part of the problem of global unsustainability to being part of the solution.

[5]Through the work of Nobel Prize-winning atmospheric chemist Paul Crutzen, the term "Anthropocene Age" has become widely used since 2000 to describe this world of today that has been profoundly influenced and changed by human activity. However, according to the International Union of Geological Sciences, we are officially still in the Holocene Epoch which began as the Paleolithic Ice Age ended some 11,700 years ago (Stromberg, 2013).

AN INVITATION TO CONTRIBUTE TO "TRANSFORMING FINANCE AND BUSINESS EDUCATION III: RECENT EXAMPLES OF TRANSFORMATION"

In the spirit of the *Journal*'s first editorial statement, we see this article as one part of a continuing conversation within the *Journal* and beyond that we hope will help influence "all of us as scholars, managers, leaders, and citizens of the world to effect positive change" (Stoner, 2013: 1). As such, we as a matter of course welcome any and all comments and suggestions for improving what we have said in this article, as well as opportunities to correct any errors we may have made or infelicitous phrasings we may have chosen. Most importantly, however, we wish to request guidance as to where we can find and report about initiatives being undertaken, especially (but not exclusively) in Jesuit business schools, to transform finance as well as all other forms of business and management education into being part of the solution to global unsustainability.

As part of this continuing conversation, therefore, we invite all readers of the *Journal* as well as all other concerned individuals to contribute to a third article in this series, with the working title "Transforming Finance and Business Education: Recent Examples of Transformation." Please share with us what you have tried, what others have tried, what has worked, and what has failed. We will assemble your reports and guidance and submit them to the *Journal* so we can extend this present article's initial coverage of opportunities for transforming finance education and initiatives for doing so. We also hope to report on the relationship of such initiatives with other efforts to make business and management education more consistent with the need for a more sustainable world. Some of those other initiatives, for instance, might include impact investing organizations and impact investment teaching, Net Impact's existing and possible future contributions, and the social-enterprise/social-innovation and Ashoka Changemaker Campus initiatives (with three Jesuit universities/business schools among the more than thirty Changemaker campuses worldwide), among others.

Our ultimate goal, however, above and beyond compiling and submitting a third article, is (and must be) to continue building a network of concerned scholars and practitioners who see the value and necessity of changing current business paradigms and practices; who understand the need to change the way finance and the other business disciplines are being taught; who grasp the professional and societal opportunities in doing so; and who will join with us to keep this vital conversation, inquiry, and transformation moving forward.

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TOWARD A THEORY OF THE ARTS AND SUSTAINABILITY

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Abstract. To make real progress on what can only be classified as environmental emergencies, we need a wide base of public consensus for action given that public motivation and involvement is a prerequisite for policymakers to implement what our scientists urge us to do. In this light, crucial thresholds of public motivation and involvement can be created by reaching into the hearts of individuals, an area of competitive advantage for the arts. Efforts to enhance understanding in this arena, however, must incorporate sufficient complexity given highly complex and inter-related challenges in sustainability. This article thus presents a theoretical framework for the arts and sustainability based on the variables of artistic complexity and public engagement. The arts, when allowed sufficient scope and freedom, can assist society in marshalling and galvanizing people across the globe to take essential steps toward a sustainable planet.

Keywords: arts and sustainability; complexity and sustainability; public engagement and sustainability

Well, you've cracked the sky, scrapers fill the air.
But will you keep on building higher
'Til there's no more room up there?

… I know we've come a long way,
We're changing day to day,
But tell me, where do the children play?

— Cat Stevens, "Where Do The Children Play?" (1970)

I. INTRODUCTION AND BACKGROUND

We live in an era where sustainability is a topic we encounter at every turn. Our planet and its human inhabitants have begun to feel the complex effects of climate change, caused primarily by human activities with negative impacts that fall disproportionately on those least able to mitigate their effects (Stocker, 2014). As the result of heavy use of fossil fuel-based energy, agricultural methods that rely on deforestation, and a world economic system driven by ever-increasing consumption and waste of physical resources, we face enormous challenges in the supply of energy, water, renewable resources, and non-renewables such as minerals as well as with extensive and far-reaching environmental degradation like the acidification of our oceans and a dramatic loss of biodiversity (Winston & Cupchik, 1992). We therefore outline in this study a powerful theory that addresses this challenge: the arts, through the empathetic process culturally embedded in each of the various types, communicate the real feeling, gravity, and complexity of the current problems the environment faces. Utilization of this fact will inform sustainability organizations that are working to heal the planet about the need to recognize and employ this powerful but little noticed cultural tool. Indeed, given the level of change required and the urgency associated with it—the global issues we face are so grave that the current century has been dubbed the "Environmental Century" (Mulkey, 2017) and the "Anthropocene" geologic age (Smith & Zeder, 2013)—we need to add the role of culture and art to our sustainability toolkits.

The life-sustaining requirements of healthy integral ecological systems on Earth are as complex as the inter-relations of the current destructions, and changes advised as remedies for the situation are just as complicated. Such complexity, moreover, is more than our current media-driven world can deliver to the public, and whatever fragments of knowledge are broadcast come to be viewed by many as quagmires to be avoided or spurned. As a result, some still do not comprehend or

accept the notion of limited or finite planetary resources; fewer still understand that waste products are threatening many of the Earth's species (including humans) well before we run out of resources, that "the sink will be full before the source is empty" (Daly & Farley, 2011: 79). Thus, while the scientific consensus is quite clear (Stocker, 2014) and the public trusts scientists more than any other social institution to provide accurate information, there is still a large gap between scientists and the public in recognizing the seriousness of the challenges we face and the urgent need for significant changes in our systems (Pew Research Center, 2015, 2016). As such, we argue here that the empathy art evokes can help close this gap.

Indeed, there are too few of those who listen sufficiently to our scientists and thereby understand our sustainability challenges. As science historian Naomi Oreskes suggested, scientists need to learn better communication with the public, and the public at the same time must recognize when industry actors disseminate wrong or deceptive information disguised as science for their own profit (Oreskes, 2014; Oreskes & Conway, 2011). Psychological and political factors also contribute to a lack of adequate public response to sustainability issues. For example, people may react with denial to reports on the severity of climate change, especially if it is perceived that personal sacrifices may be called for, and such reactions will also vary with individuals' political and economic identifications (Jylhä, Cantal, Akrami, & Milfont, 2016). The arts, therefore, can play an important role by eliciting empathetic responses that will help individuals surmount such barriers.

There is also a growing sentiment among economic and business analysts at all levels—from local to global—that moving to a greener profile in all aspects of our society can and should provide fertile ground for increases in the quality, human satisfaction, viability, and indeed in the long-term profitability of our global and local economies (Hawken, Lovins, & Lovins, 2010; Krugman, 2010; Melink, 2006; Whelan & Fink, 2016). What these greener economies will look like, how democratic they will be, and how economic rewards will be distributed within them are all questions of great interest and debate (Morris & Jungjohann, 2016; Rifkin, 2013, 2014; Shiva, 2005). The extent of public engagement with such inquiries will likely impact their outcomes to a great degree, and this will be affected in turn, as this article will argue, by how the arts become involved.

Once the public accepts the basic facts of global environmental crises, the issue of producing a workable understanding of their exceptionally complicated nature arises. The issues and challenges we confront are complex and interconnected, involving disparate areas of study

concerning things like intricate and varied biological eco-systems; the health and interconnectedness of all the Earth's resources, water, air, soil, climate, plant and animal life; questions concerning the nature of human wants and desires; the life cycle of goods and services, including disposal/recycling or re-purposing; and how decisions are made and coordinated at all levels of society, from global to individual (Cain, 2014; Folke, 2016; Francis, 2015). As such, this article will also argue that the arts can enhance the public's ability to embrace and confront this complexity.

II. MODEL AND DISCUSSION

As we consider how the arts may contribute to positive public engagement with sustainable solutions to environmental challenges, it will be helpful to consider what we mean by "the arts." This term encompasses the performing arts (music, dance, theatre), visual/conceptual arts (painting, sculpture, photography, architecture), and literary arts or literature (poetry, prose, and drama, as well as orally transmitted literature such as epics and myths) (The arts, n.d.). "Environmental art," then, is most often used as the umbrella term for visual and conceptual art related to the environment, although some use the term "eco-art" as the broadest category. Environmental art includes a wide variety of artistic forms, such as site-specific performance, ecopoetry, acoustic ecology, earthworks, eco-disco, bio-art, land art, eco-theatre, green activism, ecoventions, and many more (Bower, 2010; Environmental art, n.d.). It can be noted, however, that art by itself can also result in what some or even all would consider as "visual pollution," such as intrusive billboards or badly designed buildings. In this article, then, "artwork" refers to any type of art object, and, for simplicity, examples of artwork therein will be drawn largely from well-known pieces of music and visual art.

It will be instructive to describe two contrasting forms of environmental art by way of example. "Nature art," when defined as inspiring works of art with nature as subject, is perhaps the most basic and well-known form of environmental art. Examples include Ansel Adam's photographs of natural scenes, Mark Twain's descriptions of the Mississippi River in *Huckleberry Finn*, and Claude Monet's paintings of water lilies (another definition of nature art is art made from nature itself). The Nature Conservancy (The Nature Conservancy, n.d.) tells us that "nature is everywhere in art," and that by "conserving nature, we are helping nurture our artistic spirit." They make the link between

nature art and environmental activism as follows: "The beauty of nature reflected in art is just another reminder of our need to protect it."

Pioneered by Joseph Beuys in the 1960s, "social sculpture" is a contrasting form of conceptual environmental art which includes human activity as well as elements of social or environmental change. An example of Beuys's innovative work dates from 1982 when he constructed a pile of stones on a German site—seen from the air, the pile showed itself to be an arrow pointing to an oak tree he planted. The project, which specified that to remove a stone one had to plant a tree where the stone was placed, resulted in 7,000 trees being planted in the area. Beuys's work thus demonstrates his contention that "every human being is an artist" while simultaneously and directly motivating individuals to take pro-environment actions (Environmental art, n.d.; Tate, n.d.).

A. Art as Mover: Historic Precedents

Art is for all, both artist and non-artist alike. Unbounded by the restrictions of language, at times partly or completely nonverbal, art "speaks" across cultures and time. People and societies recognize and understand the efficacy of art as a mover of the human heart, as the power within a culture to influence and change that culture one person at a time. Writers theorize on the subject while societies impose measures such as censorship laws or propaganda campaigns to control the influences of art upon the public (Perris, 1983). Art is powerful, and this makes it an excellent cultural tool to use at a time when our culture is so slow and reticent to implement new sustainable policies and actions. How can art be used? How does art relate to the complex issues of a full Earth? What can art provide that will be successful in the place of failed efforts from scientists, politicians, media experts, and others?

A few brief examples will illustrate these ideas. Plato, ever concerned about the requirements of civil society, suggested that only certain musical modes were acceptable to society because others were so powerful that they could lead to uncivil actions (D'Entremont, 1998). Viewing all forms of art as such a powerful part of society, Stalin's Soviet Union actively brought to the public only those works which supported socialist realism while artistic works deemed contradictory to it were aggressively censored (Dobrenko, 2007). The peaceful "Singing Revolution" of the 1980s that brought down the Iron Curtain in Estonia manifested the power of the arts to move people (Sky Films Inc., n.d.). Twelve cartoons of the Prophet Muhammad, published in a Danish newspaper in 2005, fomented a global political crisis; how this happened

remains unexplained, yet the exceptional power of this art form to impact society is unquestionably clear (Müller & Özcan, 2007). In the United States, the American Library Association regularly reports on banned and challenged books (ALA Office for Intellectual Freedom, n.d.).

This brief and varied list of examples demonstrates that art is an effective tool for activating awareness, action, and change. How then can organizations and our global society utilize artists and art to address the multitude of Earth stewardship concerns before us today? Such a question is centered on the creative process and its relationship to the public.

B. The Creative Process and the Public

The creative process means taking something that rises out of the subconscious and transforming it into intuitive content that the artist can articulate in some form (idea, sketch, concept, story, etc.). Intuition is then formulated into a mental construct before the artist finally combines these processes into a physical form, creating a piece of music, painting, sculpture, dance, book, etc. (Gilbert, 2015). The physical form of the artwork is what the audience interprets, and their interpretation theoretically contains all previous forms of the work plus any new content they impute from their life experiences. Ultimately, the audience takes complete ownership over their experience of the work of art.

Thus, in contrast to earlier criticism that tended to focus tightly on the artworks themselves, modern art and literary criticism suggest that multi-faceted components characterize interpretations (Suleiman & Crosman, 2014). Moreover, given that some of these interpretations exist outside the boundaries of the artwork itself, the experience of art is a contextual understanding developed by the audience/viewer/participant and is not limited to any given work alone. This point as such is pivotal in explaining how art may be developed and used in our world to address sustainability concerns, which include a wide array of ideas that involve complex intersections of new knowledge with and against traditional values and the habits of old knowledge. "The vitality of audience-oriented criticism depends precisely on the realization that various dimensions of analysis or interpretation are possible, and that a combination of approaches is not a negative eclecticism but a positive necessity" (Suleiman & Crosman, 2014: 7). In other words, the public experience or interpretation of an artwork is now understood as an integrated and expansive idea, and the original artwork comes to contain interpolations inserted by an individual or the public, depending upon context.

The twelve cartoons of the Prophet Muhammad mentioned above are a case in point. Understanding art in this way creates connections of many types that extend far beyond a tightly restricted *urtext* (strictly based on the original) interpretation, and the expanded function this type of interpretation or criticism leads to extends the palette for the artist/audience experience. In this context, therefore, art is ripe for dealing with complex issues in society such as climate change. Several musical examples demonstrate the variety: many will be familiar with Joni Mitchell's "Big Yellow Taxi," a song that kicked off the environmental movement in the 1970s, or Macklemore's more recent rap about conspicuous consumption, "Wings" (2011) while other complex works such as three out of the last four Pulitzer Prizes in music show great concern for sustainability, specifically referencing climate change ("Become Ocean" by John Luther Adams, 2014), coal mining ("Anthracite Fields" by Julia Wolfe, 2015), and human trafficking ("Angel's Bone" by Du Yun, 2017).

All these pieces generate audience interpretations within the context of a "full" planet—an Earth with a human population and consumption patterns that exceed its sustainable support mechanisms (Daly, 2014). Although an artist like Beethoven wrote about nature in his Pastoral Symphony No. 6, his music was experienced in a 19th century context that stayed primarily within the boundaries of the work, closer to the naturalistic descriptions found therein. Beautiful and significant as it is in the history of music as a programmatic work, it can only speak historically; moreover, Beethoven's content voice has significantly weakened because it lacks the context of today's human-caused climate change destroying the very nature the symphony references (this does not of course preclude modern listeners from bringing today's context into play in their own individual interpretation of the work). By contrast, each of the recent Pulitzer Prize works cited above demands that audiences formulate a unique reaction and engagement with the challenges facing the Earth today and that they bring those into our culture. The interpretation will be properly eclectic, individual, and challenged by current practices across the globe.

C. Empathy, Compassion, and Art

We respond empathetically whenever we are actively engaged with an artwork. To develop a manageable model of art and sustainability, therefore, we must build a foundation upon the inherent capability of art to elicit empathetic and compassionate responses to the challenges we face in creating a sustainable world (Mace & Ward, 2002). Scenes of suffering in films, for example, can cause us to feel pain. Music can easily trigger memories of a special time, a first experience, or of moments

shared with a family member or friend; in fact, music perception studies repeatedly confirm that people can still identify basic and intended emotional cues and content that are consistent with the culture in which a piece of music was created—even if they are outside that culture's paradigm. Art, therefore, is especially powerful because it can activate the audience's capacity to experience emotion and feeling even when they are unfamiliar with the culture that produced the work.

Adam Smith, capitalism's first philosopher, acknowledged the key role of compassion and empathy (he calls the latter "sympathy") in the newly forming economic system based on competition and free-trade. He argued that the existence of sympathy as a basic human trait binds humanity together and leads to the creation of a "natural" moral order, which in turn allows a free enterprise system to function without disorder and social breakdown (Hanley, 2016). Smith carefully notes the key role of the human imagination:

> As we have no immediate experience of what other men feel, we can form no idea of the manner in which they are affected, but by conceiving what we ourselves should feel in the like situation. Though our brother is on the rack, as long as we ourselves are at our ease, our senses will never inform us of what he suffers. They never did, and never can, carry us beyond our own person, and it is by the imagination only that we can form any conception of what are his sensations. Neither can that faculty help us to this any other way, than by representing to us what would be our own, if we were in his case. It is the impressions of our own senses only, not those of his, which our imaginations copy. By the imagination, we place ourselves in his situation. (Smith & Haakonssen, 2002: 7)

Modern scholars have confirmed Smith's observation-based philosophy that we are neurologically hard wired to respond empathically (Rifkin, 2009). This fundamental human impulse to empathy/sympathy allows art, which also springs from the human imagination, to be an essential part of the equation for change. Art can succeed where science, the media, and politics alone fail precisely because art is empathetic within and across cultures, and when we experience an empathic feeling through art, we develop compassion that can lead to action. Art serves to activate this chain reaction, and its efficacy rests on our ability to engage our empathic selves with others toward sustainable change.

We have so far discussed how the arts can function in society as an effective cultural tool that dynamically engages people's hearts around an idea. To employ art successfully in this way, both the artist and those concerned with sustainable change need to be aware of art's key role in

society and of the dynamics of art and complexity. The model below explores these dynamics.

D. A Model of Complexity and Art

Art holds the potential to mirror the complexity of a topic without being scientific, legalistic, or otherwise inaccessible to a wide audience due to technical or unfamiliar language. Art can also successfully communicate complex inter-relationships at the sub-conscious level since it enters the spirit and heart before reaching the mind. For example, it is well known that listening to music affects almost all limbic and para-limbic brain structures in contrast to the more focused structures affected by intellectual thought. Music therapists can therefore use the ability of music to evoke in reliable fashion exceptionally strong emotions that affect the mood of individuals (Koelsch, 2010). The field of advertising as well has long used the arts to influence human attitudes and behavior, at times even using challenging works and eliciting both positive and negative responses from critics (Tinic, 1997). Thus, given that affecting mood precedes content education, art represents a key opportunity for effectively managing the presentation of new and challenging content to the public. This in turn can be taken further with a focus on artistic complexity.

Figure 1 demonstrates the central focus of the theoretical argument in this article concerning the relation of art to sustainability: public engagement is understood to be a function of artistic complexity. The x axis represents the degree of complexity of a given artwork—increasing complexity means an increasing number of key artistic elements present in the work. Artistic complexity is thus an independent variable because the artist determines the number of elements in the artwork. The y axis represents the level of engagement experienced by the public audience, modeled here as the dependent variable. Art education studies clearly demonstrate how viewers are able to identify the elements or parts of an artwork, with even children clearly able to make such distinctions (Hardiman & Zernich, 1982). It is thus reasonable to use this concept of the elements of an artwork in a model of sustainability and the arts. Accordingly, the higher the artistic complexity (the more elements an artist puts into play within the work), the higher the corresponding level of public engagement, resulting in an upward sloping function.[1]

[1]The authors plan to explore other aspects of this function in more detail in subsequent research.

When the audience interprets a work of art, they experience it as a set of component elements or parts that they engage with and relate to in any way they choose. They are essentially selecting one or more combinations of the parts they have experienced to form their individual interpretation. Public engagement with art is thus defined as the re-arranging of the parts of an artwork in a unique way that is meaningful to that individual. As such, when the artwork provides greater artistic complexity or more artistic component elements, it allows and indeed encourages higher levels of engagement on complicated issues (such as sustainability) and vice versa, so that a move toward less artistic complexity is associated, all things being equal, with a lower potential to engage complex understanding.

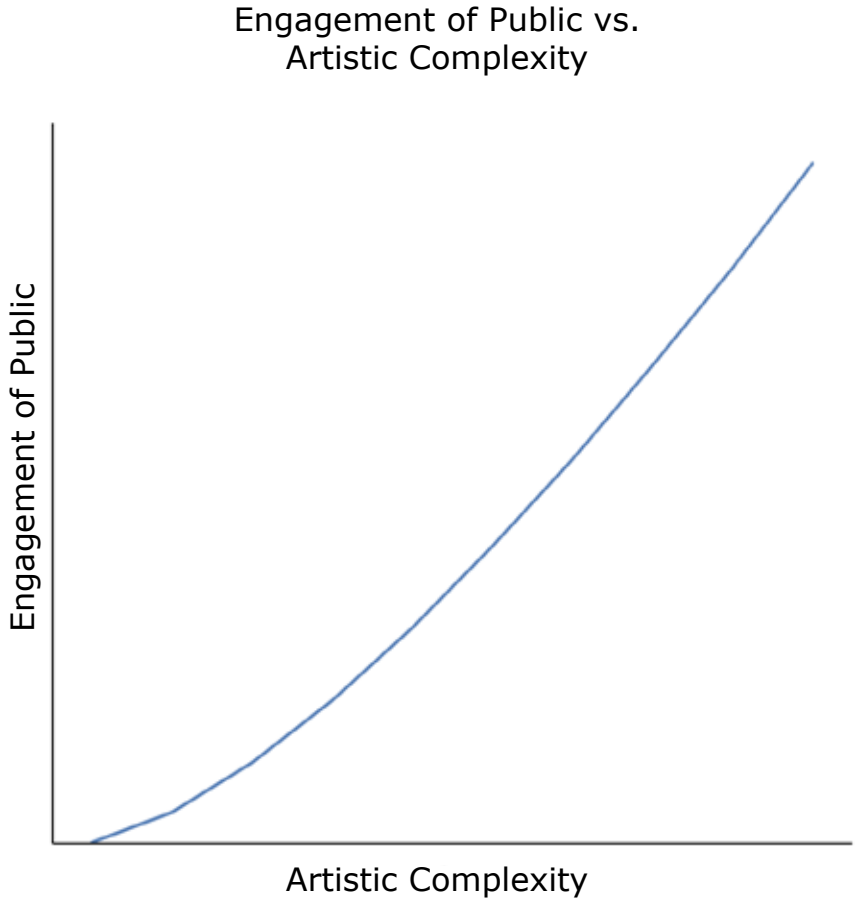

Figure 1: Engagement of Public vs. Artistic Complexity

Understanding the complexity-engagement relationship is important when considering how culture helps increase awareness about complex

issues in sustainability. An artwork that adds complexity in relating to an ecological topic mirrors the complexity of the topic or issue itself and produces new opportunities and paths for audience engagement. This expanded opportunity to appreciate and accept the complex topic increases in turn the ways in which the artwork may enter the heart. Thus, compared to a scientific journal article which would always take complexity into account but which could fail to communicate its main concept to the public for reasons of jargon and elaborate intellectual content, a topical artwork that incorporates elements of this scientific complexity may have a better chance of engaging the public and eventually preparing it to deal with the outcomes related to a given article. In short, well-crafted art with a slightly higher degree of complexity holds strong promise for communicating with audiences and engaging them on complex issues in sustainability, and yet this remains an unexploited asset.

Of special importance, however, is art that currently exhibits very low levels of complexity but involves large markets, such as commercial and popular arts. These forms of art are potentially powerful precisely because of the wide audience to which they have access, and, as discussed below, they sometimes address sustainability directly and intentionally to communicate basic concepts such as the benefits of recycling or energy conservation or the ill effects of pollution. The influence of these arts on sustainability is faltering, however, because of the singular and simplified focus typically employed in commercial applications, which in turn is due to the perception that audiences respond better to simple messages and stimuli (Schmidt, 1990).

E. Categories of Artistic Complexity

Figure 2 below attempts to examine levels of artistic complexity and public engagement more closely by modelling five broad categories of art in regions along the curve. In order of increasing complexity, these are commercial and popular arts,[2] transitional arts (a fusion of commercial/popular arts and the classical arts), classical arts, and the serious contemporary arts. Such categories, though they may not be appropriate for every work, account for much of the art experienced in our culture today. The overlaps between categories are important as well, indicating ambiguity as to where each begins and ends. The graph is thus intended to locate and explain different types of art for the purpose of connecting art to the public, especially when that art involves content, ideas, or purposes related to sustainability.

[2]The question of whether commercial art in particular is indeed "art" is a long-standing debate beyond the scope of this article. For the purposes of this study, it is assumed to be a simple art form (Schmidt, 1990).

Commercial and Popular Arts are characterized primarily by the fact that they have a very high level of interaction with the public either through use or purchase. The Transition Arts cover a wide region between the Popular Arts and the Classical Arts, and have selected characteristics from both categories. The Classical Arts tend to be mostly of historic interest, and are primarily shared with the public through subsidized venues such as libraries, art galleries, classical music series, etc. The Serious Contemporary Arts occupy a region the public is much less aware of; for the most part, this art is complex, intended to be highly engaging, and created mostly during our lifetimes, often using contemporary or *avant-garde* techniques (Bertaux, Skeirik, & Yi, 2015). Of special interest in this article will be the region of lowest complexity, Commercial and Popular Arts, which is omnipresent in modern culture and yet yields relatively lower engagement for the audience.

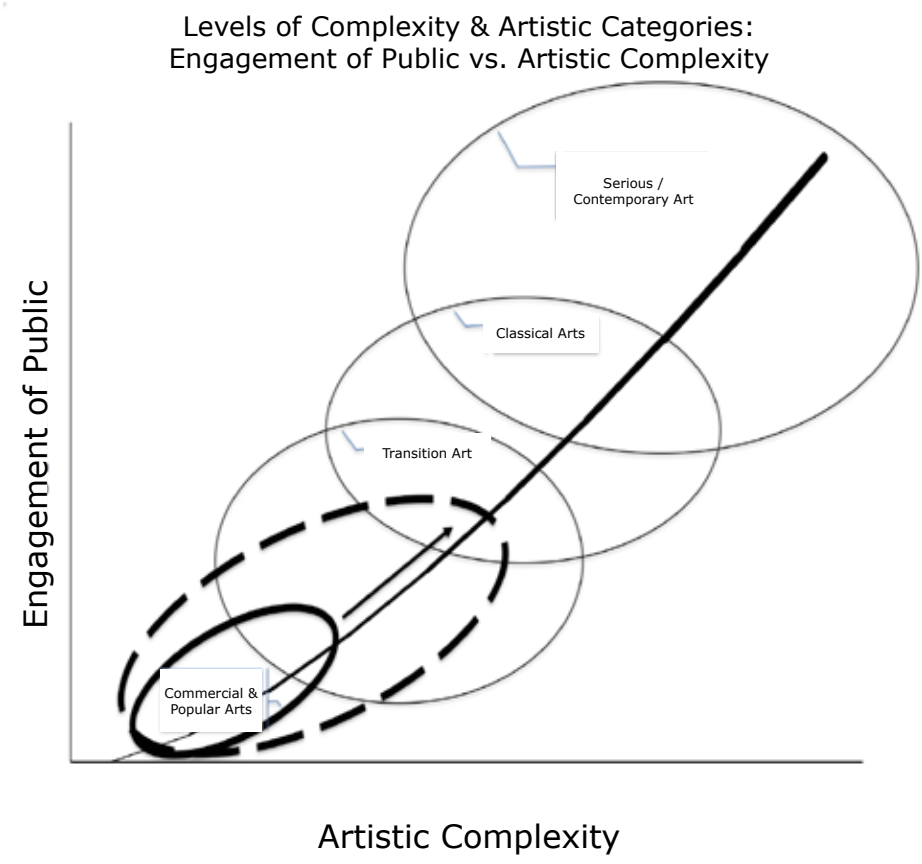

Figure 2: Levels of Complexity & Artistic Categories: Engagement of Public vs. Artistic Complexity

An exit sign is an example of commercial art and the Beatles song "I Want to Hold Your Hand" (1963) is an example of popular art. Representing functional art for business purposes, the exit sign involves a single, basic artistic element and a correspondingly simple level of engagement. The Beatles song would sit to the right of the exit sign and has several elements such as text, rhythm, and harmony, and thus a higher degree of complexity.

Complexity increases and the general style becomes more involved as we move into transition arts, with terms such as "fusion" sometimes characterizing these works (Sutton, 2008). Wynton Marsalis exemplifies a cross-over artist who in 1983 won Grammy awards in both classical and jazz. Andy Warhol's "Campbell's Soup Cans" (1962) exactly replicates the labels on said soup cans, manifesting a low level of complexity from that point of view; however, when the 32 large images of cans are considered as a whole, his piece exhibits a higher degree of complexity, thereby causing more challenging engagements with viewers.

Classical Art is well known to symphony and art museum patrons as well as to readers of serious literature, poetry, and other historic arts. Examples would range from ancient Greek sculptures to symphonic literature for the orchestra and to works such as those of the poet Walt Whitman. These pieces are viewed today as cultural milestones for their times, are more extensive, have many component parts, and often demonstrate techniques novel to their era.

Finally, Serious Contemporary Art is intellectually involved contemporary art with many inter-related elements. Contemporary in this context is interpreted as being within an artist's lifetime (Bertaux et al., 2015), although works of a simpler nature, such as renditions of the Star Wars theme by a pops orchestra, are not included. The Serious Contemporary region occasionally exhibits popular and commercial interests, however, such as the modal pulse music of Steve Reich (b. 1939–) or the surrealistic paintings of Salvador Dali (1904–1989).

As observed above, the increasing prevalence of commercial and popular art in our global society can potentially be used to influence sustainability awareness, commitment, and understanding in a positive way. Indeed, the addition of even one or two elements in a commercial or popular artwork can significantly increase its engagement factor with an audience and, ultimately, its impact on sustainability. The dotted oval and associated arrow in Figure 2 thus show the proposed expansion of the range of complexity exhibited in the Commercial and Popular Arts to increase its overlap with Transition Art. Simple popular constructions need additional complexity to allow the public to select the meanings

and ideas that appeal to their hearts, which results in more effective communication about the complexities of ecological economies, new sustainability programs, and integral ecologies.[3]

The model presented above thus informs the artist and sustainability implementer that when the level of complexity installed in an artwork comes close to mirroring the level of complexity inherent in a sustainability topic, the potential for true and constructive societal engagement can increase, and perhaps exponentially.

III. IMPLICATIONS

An obvious implication of this model concerns the importance of artistic freedom since art cannot flourish without it. This article suggests that freedom of artistic expression is a crucial foundation for mobilizing the arts in the service of sustainability. Establishing and encouraging freedom for the arts, however, presents varied challenges for different nations and cultures (Harris, 2005; Johnson & Canaves, 2009; Kearns, 2013; Okeke-Agulu, 2010).

Society also needs to go beyond ensuring artistic freedom to provide room for a movement toward greater complexity, and so a further concern of this article involves the tendency of commercial interests to influence the arts toward less complexity (Collins & Skover, 2005). Commercially successful pop music, for example, is generally simple in structure, based on tried and true forms, and singular in message (Starr & Waterman, 2008). Moreover, a review of today's top ten popular songs reveals the content of the lyrics to be primarily about sex, with the top five focused exclusively on this topic (Billboard, n.d.; Rasel, 2017). There is no environmental content in any of the top ten songs, and so while pop music pieces on environmental themes do exist, the more complex messages they contain typically receive much smaller public exposure and less commercial success. A society that bathes in an ocean of commercial and popular arts, with infrequent visits to small ponds of more complex arts, therefore risks losing one of its primary tools of societal awareness. As such, there is an urgent need in most global societies for increased public access to a wide variety of artworks found across the spectrums of type and complexity. This in turn suggests a further need for increased public support for the arts (Cherbo & Wyszomirski, 2000) to ensure a vibrant artistic community for sustainability managers and activists to interact with and use as inspiration.

[3]See Pope Francis's call for "integral ecology" in his 2015 encyclical *Laudato si'*.

A compassionate public, one that engages in complexity through sensitive artworks, can truly innovate and create new economies for an integral ecology because it has a rich vein out of which creative new thinking may flow. Out of these arts will come the inspiration and revitalized commitment to build a full Earth and a new world, for art is the *affecting* force needed to stimulate true intellectual knowledge and invention—it is not knowledge itself but the force behind knowledge. Few other aspects of society glare into the mirror and deliver this affect, no matter how beautiful or upsetting it may be. Indeed, science has begun to recognize that it cannot solve this problem alone, that it needs the arts to deliver empathy. Ecologist Gerardo Ceballos observes, for example, that the "massive loss of populations and species reflects our lack of empathy to all the wild species that have been our companions since our origins" (Phillips, 2017).

IV. CONCLUSION

Creativity through the arts is an essential cultural tool that society harnesses to activate compassion and engagement (Kagan, 2014). When a human person's heart is moved, the wildest, strongest horse in the corral is saddled. It is ironic, then, that human creativity enabled the economic growth that has generated our complex environmental degradations, for it is creativity and compassion that must drive solutions found both within and beyond these problems. As such, below are a few applied examples in art, business, government, and the public sector of how a deep recognition of complexity in sustainability and environmental issues can increase public engagement toward more effective solutions.

- Businesses, advertisers, and business educators can utilize the guidelines in the sustainability communications toolkit of the United Nations Environment Programme (UNEP). Following these guidelines will increase the complexity level of advertising and thereby more successfully engage the public with product and environmental realities while mutually benefiting both (United Nations Environment Programme, n.d.).

- Expand the National Endowment for the Arts to combine more applied sustainability/environmental art with shovel-ready public/business projects that are receiving federal funding. Coupling projects and funds will increase awareness and appropriately move art projects up the complexity curve, thereby increasing public engagement.

- Established arts organizations can adjust their missions to set aside a third of their commissioning funds for sustainability/environmental topics of local or regional interest, thereby employing place-based engagement goals that connect with local audiences.

- Sustainability and environmental organizations, such as the Environmental Defense Fund or the Sierra Club, could initiate and develop a cultural/artistic arm for the specific purpose of increasing engagement through artistic works, one that is consistent with current projects and goals.

- Businesses can begin considering "managing for sustainability" by becoming aware of artistic statements that have been created relative to their specialties, and with a view toward unique solutions that would not have been available to the organization without the artistic engagement factor. Such engagement can be seen as analogous to diversity/inclusion training which, when done well, results in "managing for diversity" (Chavez & Weisinger, 2008).

- Billboard should recognize the number and significance of environmental songs in popular music with a new category called "Earth Music" (not to be lumped in with the Social Chart), thereby stimulating more popular interest in sustainability.

For art to speak effectively of the truth and beauty that we are seeking, sustainability leaders and environmentalists can utilize the following ideas:

- we are the first generation to face these unknowns;

- our economies must be understood as existing within the larger sphere of nature;

- morality is the foundation for economic and social structures;

- compassion and empathy, including compassion for the Earth, are effective and natural tools for moving the hearts of human persons;

- the arts are society's oldest means of delivering emotive material, pre-dating modern social and economic structures (White, 2003); and

- the arts, at the requisite level of complexity, can engage people to care of and solve these unknowns.

Free artistic expression and sufficiently complex artistic works can move us to understanding and action for a more humane and sustainable world. As stated at the recent Jesuit task force on ecology (which served as a key input to Francis's *Laudato Si'*), we "need to confront our inner resistances and cast a grateful look on creation, letting our heart be touched by its wounded reality and making a strong personal and communal commitment to healing it" (Álvarex, 2011: 7). This "look on creation" can and should include artistic visions that are creative, uncensored, and richly reflective of the underlying complexity in our world's eco-systems and challenges. Once we know what we are looking for, then and only then can we effect change. Art indeed is the catalyst that activates the empathetic vision within the heart.

To summarize, we clearly require wide consensus on the need for timely and significant action to make real progress with what can only be classified as environmental emergencies. This consensus, however, will not arise from sound, well-replicated scientific studies alone, for while scientific analysis and understanding necessarily form the foundation of our actions, many other hands are needed on deck. When we look to our policymakers, whether at the local, regional, national, or international level, we find a remarkable inability to take successful and meaningful steps (Lefalle, 2008). Even a highly lauded and hard-won measure such as the Paris climate accord, for example, is currently undergoing setbacks because of politicians' varied agendas (Shear, 2017). It is highly likely then that the public at large needs to be motivated and involved as a prerequisite for policymakers to be so. The focus of this article, therefore, has been on adding another complementary factor to this process, namely, the importance of reaching into the heart of every individual, which is *an area of competitive advantage for the arts*.[4] It is the thesis of this study that the arts are a prime candidate for creating crucial thresholds of empathy, motivation, and involvement in the public. When allowed sufficient freedom and scope, the arts can greatly assist society in better marshalling and galvanizing people across the globe to take essential steps toward a sustainable planet.

[4]This change of heart may also occur through faith and spirituality; see Francis, for example, on the need for a change of heart to re-think fundamentally about behaviors and practices so that we may preserve our Earth and the life on it, both human and otherwise (Francis, 2015: § 218).

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SUSTAINABILITY VISION AND PRACTICE

THE APPARENT GAP BETWEEN CORPORATE LEADERS' PRONOUNCEMENTS AND THE PERCEPTIONS OF POLISH AND U.S. MBA STUDENTS FROM THREE UNIVERSITIES

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Abstract. This study focuses on the CEO-asserted critical need for sustainability in corporate strategy and MBA student perceptions of the extent to which their respective programs prepare them to handle sustainability challenges successfully. Students in one Polish and two U.S. mid-tier MBA programs were surveyed regarding their perceptions of four issues: 1) the link between sustainability practices and corporate performance; 2) the barriers to embedding sustainability practices in their current job; 3) the effects of being a sustainability advocate on their careers; and 4) the efficacy of their MBA programs in fostering leadership perspectives and skills related to sustainability. While students generally agreed on the positive link between sustainability practices and performance, they differed on the other

issues. The study discusses the implications of these findings for faculty members who want to close the gap between what CEOs say they need from graduates related to sustainability vis-à-vis the ability of current MBA programs to fulfill that need.

Keywords: sustainability practices; sustainability advocacy; leadership; cross-cultural management education

INTRODUCTION

The attitudes of CEOs toward sustainability assert that it is increasingly becoming a driver of corporate strategy. They have stated 1) that sustainability will transform their businesses within the next five years (Hayward et al., 2013); 2) that implementing sustainability strategies is increasingly becoming a competitive imperative (Kiron, Kruschwitz, Haanaes, & Velken, 2012) and is often one of the top three issues on their strategic agenda (Bonini & Bové, 2014); 3) that their firms' corporate business models are already including sustainability to capture strategic market opportunities (Kiron, Kruschwitz, Reeves, & Goh, 2013); and 4) that embedding sustainability in a corporation's core businesses will generate revenue growth through new opportunities (Hayward et al., 2013).

Nevertheless, these same CEOs indicated that their firms are currently trapped by "pilot paralysis," the inability to take small-scale, successful projects and expand them for greater impact.

> CEOs believe action will be required not only in reshaping a new architecture for corporate sustainability, but also in linking sustainability tangibly and quantifiably to value creation, moving at scale and speed beyond pilot projects of incremental improvement toward transformational change. (Hayward et al., 2013: 19)

Lee and Brackley (2017) also add that short-term competitive market dynamics pose major challenges to sustainability practices. Thus, if such "transformational change" (Hayward et al., 2013: 19) is to be achieved, all organizational leaders must be able to translate their CEO's broad vision for sustainability into doable practice (Klettner, Clarke, & Boersma, 2014). Yet Lacy et al. (2010) found that "nearly a quarter (24 per cent) of all the CEOs selected 'lack of skills/knowledge of middle-senior management' as one of the top three barriers preventing them from effectively

implementing sustainability" (p. 352). Indeed, the literature on hiring managerial talent who possess the requisite technical knowledge of sustainability and the leadership skills needed to effect large scale organizational change supports these findings (Epstein & Buhovac, 2014; Goleman, 2010; Huber & Hirsch, 2017). Klingenberg and Kochanowski (2015) thereby concluded that "few organizations will find themselves in the luxurious position [of having] the right mix of people with the right mix of capabilities when starting sustainability initiatives" (p. 990).

Our research was stimulated by this juxtaposition between the need for skilled leadership teams that can implement sustainable business models versus current difficulties CEOs have in finding them. The historical view of management education as the formal agent for developing managerial talent (Khurana, 2007) led to our research question: How well is management education preparing future leaders to understand, advocate for, and implement sustainability so that transformational change can occur? Even though a growing body of literature identifies sustainability as an increasingly important management education topic (Collins & Kearins, 2010; Figueiró & Raufflet, 2015; Sharma & Hart, 2014; Weybrecht, 2013, 2016), few existing studies concurrently evaluate MBA students' perceptions on 1) the links between sustainability practice and corporate performance; 2) the barriers to embedding sustainability in their current job; 3) the effects of being a sustainability advocate on their career; and 4) how well their MBA programs foster leadership perspectives and skills related to sustainability. Given that sustainability is a global challenge, our study measured and assessed all four of these dimensions in a cross-cultural context by analyzing the MBA programs of one Polish and two U.S. universities.

We chose Poland for two reasons: 1) because of Poland's formal commitment to sustainable development, which has been codified in Article 5 of the Polish Constitution since April 1997 (Scrobota, 2014), and 2) because of the country's significant growth post-transition. Poland is the leading economy in Central and Eastern Europe (Piatkowski, 2013) and one of the most robust economies in all of Western Europe (Bogdan, Boniecki, Labaye, Marciniak, & Nowacki, 2015). We therefore wanted to investigate whether MBA education for sustainability in Poland (Kronenberg & Bergier, 2010, 2012; Scrobota, 2014) was keeping pace with the country's dynamic growth.

Our study begins with literature reviews on sustainability as a contested concept, the leadership-sustainability-strategy relationship, and on the challenge of integrating sustainability into management education. We then describe the study's research methodology and findings. These in turn lead to a discussion of the gaps between

management curricula and the successful development of managerial talent which for CEOs is critical for embedding sustainability throughout their organizations. We conclude with a discussion of the study's limitations and provide suggestions for future research.

SUSTAINABILITY: A CONTESTED CONCEPT

Gallie (1956) describes four characteristics that define "essentially contested concepts": a contested concept refers to 1) a valued achievement that 2) is internally complex, 3) has its meaning revised as circumstances change, and 4) has its origins in an exemplar whose authority is recognized. Moreover, individuals using a contested concept acknowledge the concept's contested character.

In light of this definition, the complexities involved in understanding sustainability are well-established (Filho, 2000). Lankoski (2016), for example, notes that "there has been a protracted debate on the general definition of sustainability" (p. 849). Johnston et al. (2007) have found over three-hundred definitions of sustainability, while Quental, Lourenço, and Da Silva (2011), Little (2014), and Owens and Legere (2015) have all noted that the term "sustainability" has become more ambiguous over time, as contested concepts often do. As Carew and Mitchell (2008) note: "The existence of different conceptions of sustainability is not surprising because the concept is comparatively young, complex and abstract and … it rests on both factual and ethical components" (p. 106). The matter is complicated further when Bell and Morse (2008) observe that the "very holistic and anthropocentric essence of sustainability continues to elude attempts at objective analysis and assessment" (p. xvii).

As for a contested concept having its origin in an exemplar whose authority is acknowledged, the Brundtland Commission's statement that sustainable development is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987: 16) is often identified as the exemplar for sustainability. The power of the Brundtland Commission's definition of sustainable development is prima facie: it is easy to understand and it resonates with individuals on an intuitive level. It also implies that sustainable development is multi-generational and involves issues of intergenerational justice, and that humans are in a dependent relationship with their environment (Holden, Linnerud, & Banister, 2014; Laasch & Conaway, 2015).

The Brundtland Commission's definition of sustainable development, however, is also contested (Hopwood, Mellor, & O'Brien, 2005; Jacobs, 1999; Pearce & Atkinson, 1998; Redclift, 2005). First and foremost, it is difficult to operationalize (Barkemeyer, Holt, Preuss, & Tsang, 2014; Little, 2014) due to the ambiguity inherent in the concept of "needs." If the goal of sustainable development is to allow future generations to meet their own needs, then it is necessary to predict with accuracy what those needs will be while also determining when they will become salient. But chaos theory (Levy, 1994) and complexity science (Stacey, 1995) suggest that accurate forecasts of any long-term future are challenging—and often faulty. Furthermore, Hopwood, Mellor, & O'Brien (2005) note that the Brundtland Commission's definition of sustainable development is intentionally ambiguous, which helps explain its contested character as historically situated (Mebratu, 1998).

Despite the lack of definitional consensus, however, the business community sought to embrace sustainable development through the concept of corporate sustainability (Antolín-López, Delgado-Ceballos, & Montiel, 2016). For example, in an attempt to bring the Brundtland Commission's concept of sustainable development more firmly into the business domain, Elkington (1997) stated that sustainable development for businesses involves developing and then assessing organizational performance against economic, social, and environmental measures, e.g., the triple bottom line. As Collins and Kearins (2010) note, the triple bottom line is "a simple heuristic that both managers and business students can use as a prompt to remember the interrelated social, environmental, and economic dimensions fundamental to sustainability" (p. 500). Bansal (2005) in turn attempts to make such a framework more precise by outlining three elements of corporate sustainability—"Environmental integrity through corporate environmental management; social equity through corporate social responsibility; economic prosperity through value creation" (p. 199–200)—while Porter and Kramer's (2011) concept of shared value captures the complementary benefits that accrue to organizations, the environment, and society when triple bottom line thinking is a driver of core business strategy (Savitz & Weber, 2006; Sridhar, 2012). Landrum (2017) has noted, though, that the proliferation of terms related to corporate sustainability (e.g., corporate social responsibility, corporate citizenship, corporate social performance, environmental management, and corporate sustainability and responsibility) merely adds confusion to this scholarly debate.

The relationship between corporate sustainability and corporate social responsibility is similarly contested (Moon, 2007). Both concepts deal with the relationship of business to society and have since come together as discussions in stakeholder relationships (Donaldson

& Preston, 1995) and corporate citizenship (Matten & Crane, 2005) advanced. Bansal and Song (2017) have thus attempted to untangle what they believe to be an unfortunate convergence which they refer to as responsibility and sustainability: "Business managers and researchers alike now use the words *responsibility* and *sustainability* interchangeably, inconsistently, and ambiguously" (p. 106, italics in original). Such convergence in usage has not only increased confusion in the field but also stunted its growth, leading Bansal and Song (2017) to argue for the continued differentiation of the terms.

Given such complexity inherent in defining the concepts of sustainability, sustainable development, and corporate sustainability, scholars are now opting out of definitional debates (Holden et al., 2014; Müller & Pfleger, 2014). They increasingly review the literature germane to their research and simply state which term(s) they will use (Landrum, 2017). As such, we follow Bansal and Song (2017) by using the term "sustainability" throughout this article.

THE LEADERSHIP-SUSTAINABILITY-STRATEGY RELATIONSHIP

A variety of studies suggest that sustainability has become an increasingly important topic for corporate leaders (Berns et al., 2009; Bonini, 2012; Bonini & Görner, 2011; Kiron, Kruschwitz, Haanaes, Reeves, Fuisz-Kehrbach, & Kell, 2015; Lacy, Cooper, Hayward, & Neuberger, 2010; Lubin & Esty, 2010). CEOs report that sustainability is now "on their corporate radar," and they believe finding sustainable solutions to current and future business challenges has the potential to transform their industries (Hayward et al., 2013). Moreover, a growing body of research links sustainability to improved financial performance (Cooper & Schlegelmilch, 1993; Kaspereit & Lopatta, 2016; Lo & Sheu, 2007; Lourenço, Branco, Curto, & Eugénio, 2012): a Deutsche Bank meta-analysis of 56 academic studies found that companies with high ratings on economic, social, and governance (ESG) factors had a lower cost of debt and equity. Such firms also outperformed the market in both the medium (three to five years) and long (five to ten years) term (DB Climate Change Advisors, 2012).

CEOs, however, also acknowledge frustration with embedding sustainability throughout their organizations, and often struggle when it comes to sustainability initiatives (Lee & Brackley, 2017). "That's not because they don't see sustainability as a strategic issue. Rather, it's because they think they're facing an unprecedented journey for which

there is no road map" (Lubin & Esty, 2010: 2). As such, the Balanced Score Card (Figge, Hahn, Schaltegger, & Wagner, 2002), Total Quality Management techniques (Curry & Kadasah, 2002; Zairi, 2002), the development of corporate sustainability performance measurement systems (Searcy, 2012), and the Global Reporting Initiative (Bonini & Bové, 2014) are all attempts to develop management tools that can quantify corporate performance via-à-vis sustainability efforts.

Müller and Pfleger (2014) have proposed the Sustainability Maturity Cube to help CEOs map and manage their organizations' progress along three intersecting dimensions of corporate sustainability: 1) corporate activities, 2) the dimensions of sustainability those corporate activities address, and 3) the progress of institutionalization of those sustainability actions within the organization. Such a framework aids CEOs in structuring their actions for a "transformation towards sustainability" within their corporations (Müller & Pfleger, 2014: 316).

Beyond determining accurate sustainability measurement tools, CEOs must also embed sustainable development into their companies' core business strategies (Engert & Baumgartner, 2016; Engert, Rauter, & Baumgartner, 2016; Stead & Stead, 2013). In this regard, Hahn et al. (2015) and Metcalf and Benn (2013) provide insights into why CEOs find the development of corporate sustainability strategies difficult. For Metcalf and Benn (2013), corporate sustainability is a complex problem, and as such is solved through complex cognitive processes which in turn are further challenged by the open systems that characterize most organizations. Open systems tend to act with the environment in "dynamic nonlinear" ways (Metcalf & Benn, 2013: 375), and so organizational leadership for sustainable development requires someone who

> can read and predict through complexity, can think through complex problems, engage groups in dynamic adaptive organisational change and can manage emotion appropriately. In essence, leaders and leadership is a key interpreter of how the complexity of the wider complex adaptive systems environment of the organisation "links" internally to the organisation, and this link is a powerful mediator for successful implementation of sustainability, or may even be an expression of it. (Metcalf & Benn, 2013: 381)

Despite the various sustainable development challenges companies face, such as a lack of clear and consistent definitions, difficulties in measuring social impact, scaling sustainable development projects from pilot to core strategy, and hiring the right CEO with a comprehensive sustainability mindset, among others, CEOs are "virtually united in the

view that sustainability … is and will be a major force to be reckoned with—and one that will have a determining impact on the way their businesses think, act, manage and compete" (Berns et al., 2009: 3).

MANAGEMENT EDUCATION AND SUSTAINABILITY

The well-established mission of business schools and programs is to develop human capital for effectively managing organizations (Grey, 2002; Khurana, 2007; Muff, Dyllick, Drewell, North, Shrivastava, & Haertle, 2013). As such, just as sustainability has crept into corporate operations and strategy, so too has it become increasingly important in management education (Wankel & Stoner, 2009; Weybrecht, 2016), although it still faces challenges (Figueiró & Raufflet, 2015). First, complete incorporation of sustainability across the entire business curriculum is limited, although a growing number of case studies describe MBA program redesign with sustainability at its core (Bamburg & Rowledge, 2009; Barber, Wilson, Venkatachalam, Cleaves, & Garnham, 2014; Hesselbarth & Schaltegger, 2014; Moran, Higgins, & Rosen, 2009; Stubbs & Lockhart, 2009). Second, much of the published management literature is descriptive, with articles focused on integrating sustainability concepts at the course level (Collins & Kearins, 2010; Landrum & Ohsowski, 2017). Examples of redesigns that incorporate sustainable development issues have clustered around marketing (Bridges & Wilhelm, 2008; Borin & Metcalf, 2010; Delong & McDermott, 2013; Perera & Hewege, 2016; Pentina & Guilloux, 2010; Rountree & Koernig, 2015; von der Heidt, 2014), accounting (Coulson & Thomson, 2006; Fleischman & Schuele, 2006; Gray, 2013; Kelly & Alam, 2009; Ng, Leung, & Lo, 2017; Saravanamuthu, 2015), finance (Werner & Stoner, 2015, 2017), and entrepreneurship (Schlee, Curren, & Harich, 2008) courses. In contrast, Cavico et al. (2015) describe a multi-disciplinary approach that integrates ethics, law, social responsibility, and sustainability in a mandatory leadership and gateway experience for all incoming MBA students at one U.S. university. To date, few textbooks have been published that integrate sustainability ideas into general management, organizational behavior, or leadership courses (Figueiró & Raufflet, 2015). A recent review of eleven sustainability management textbooks captures the current state of the field in its title: "Sustainability Management Textbooks: Potentially Necessary, but Probably not Sufficient" (Starik, Kanashiro, & Collins, 2017).

Third, models for charting the progress of sustainability integration into business courses and curricula are emerging (Rusinko 2010a, 2010b)

in line with the descriptive nature of the literature. Pedagogical articles that speak to student engagement with sustainability issues cover as well the common theme of incorporating more active, applied, problem-based, and service-oriented learning into courses to bridge the theory-application gap (Baden & Parkes, 2013; Benn & Dunphy, 2008; Erskine & Johnson, 2012; MacVaugh & Norton, 2012).

Fourth, organizational challenges to embedding sustainability in business schools also involve well-known organizational change issues, such as the need for institutional resource allocation, resistance of individual faculty members to change, availability of support for ongoing faculty development to enable course and curriculum redesign, incomplete involvement of stakeholders in decision-making, and resistance to breaking down disciplinary silos (Figueiró & Raufflet, 2015). The latter point is especially challenging since sustainability is a fundamentally transdisciplinary concept (Mauser et al., 2013; Steiner & Posch, 2006; Tress, Tress, & Fry, 2004).

Finally, one of the most notable discontinuities in the management education literature to date is the lack of an epistemologically explicit educational framework within which to situate curricular and co-curricular sustainability efforts (Raufflet, 2013). As Arbaugh (2010, 2013) demonstrated in his evaluation of online and face-to-face learning, business disciplines differ in fundamental assumptions about how disciplinary knowledge is created. These differences in turn have implicit assumptions about pedagogy (Biglan, 1973). Therefore, without explicit statements of epistemological differences between disciplines, interdisciplinary work becomes more difficult because differences between what constitutes knowledge and the reliability of that knowledge are never overtly addressed. As a result, the evaluation of which pedagogies yield the most effective learning for students vis-à-vis sustainability also becomes ungrounded (Hofer & Pintrich, 1997; Meyer & Land, 2005). Thus, while agreement exists that business curricula need to change, the lack of explicit statements on "how this change could and should be undertaken, from the perspectives of both course design and an explicit educational paradigm" (Figueiró & Raufflet, 2015: 30) impedes systemic integration of sustainability in business programs.

RESEARCH METHODOLOGY

Questionnaire Design. We began our questionnaire design process with a review of the published literature on 1) the attitudes of managers

toward sustainability and corporate strategy and 2) student perceptions of the extent to which sustainability issues and topics were included in MBA programs. This review informed the questions asked in our survey's two major sections: Section One on sustainability in relation to corporate performance and Section Two on sustainability issues in the respondent's current MBA program.

Section One used items from Dale, Mayer, & Fox's (2010) research exploring business student attitudes toward environmental management. For some of these questions, we replaced the more restrictive concept of "environmental management" with the broader concept of "sustainability" in our question stems; all other questions were used verbatim from the original published source. Next came questions drawn from Lacy et al.'s (2010) study of CEO attitudes toward sustainability. This question sequence explored the relationship between sustainability and corporate strategy at the respondent's current place of employment. The latter were also asked to evaluate the significance of thirteen barriers that might impede the implementation of a company-wide approach to sustainability. It is here that we differentiated between sustainability and corporate social responsibility (Bansal & Song, 2017) by having separate questions on whether "differing definitions of corporate social responsibility" and "differing definitions of sustainability" were barriers to sustainability integration.

Section Two of the survey began with questions related to sustainability and the curriculum in the respondent's MBA program. It first assessed students' perceived opportunities to study sustainability within current courses; for this purpose, we selected items from the Aspen Institute's (2008) survey of MBA student attitudes toward business and society. A second group of questions then focused on curriculum design and asked students to evaluate how well their MBA program was preparing them to think strategically about sustainability (Net Impact & The Aspen Institute Center for Business Education, 2009). A third set of questions explored the extent to which specific pedagogies and curriculum features, such as sustainability-focused case studies and cross-disciplinary team projects, were used to understand sustainability issues (Net Impact & The Aspen Institute Center for Business Education, 2009). Selected examples of the questions used from each source can be found in Appendix A.

We also developed a question to gauge students' perceived ability to become a "sustainability advocate." Respondents were asked to identify the strength of their agreement/disagreement with each stem in the following statement: "As a strong advocate for sustainability, I will: have

problems at my current place of work; be limiting my career opportunities in the next 3–5 years; and be part of my industry's leadership."

The questionnaire concluded with demographic queries related to gender, age, years of work experience, and extent of MBA course work completed. None of the scales used in this research were copyrighted. The Institutional Review Board at one of the U.S. universities approved the final questionnaire and study design.

Respondents. Study participants were recruited from one university in eastern Poland and two universities in the United States. Non-elite, mid-tier comprehensive universities were chosen in both countries because, in the words of Fornaciari and Arbaugh (2017), the "vast majority of us do not work at elite institutions, even those residing in the, by definition, limited and prestigious universe of Association to Advance Collegiate Schools of Business International (AACSB)-accredited schools" (p. 7). By extension, the study of sustainability in non-elite, mid-tier universities also provides insights into how far along the diffusion of sustainability concepts (Lozano, 2010; Lozano, Lukman, Lozano, Huisingh, & Lambrechts, 2013) and teaching practices is in the numerical majority of MBA programs worldwide.

One of the U.S. universities is located on the east coast while the other is situated in the Midwest. The east coast university is a public institution with a total enrollment of 22,000 students, has a business school, and offers undergraduate and graduate level courses. The Midwest university is a private university, offers undergraduate, graduate, and doctoral programs, has a business school, and has a total enrollment of 3,800 students. The Midwest university also has an accelerated MBA program which can be completed within a year and exempts qualified undergraduates from all foundation courses. Both U.S. universities hold AACSB International accreditation.

The Polish university, located in east Poland, has approximately 24,000 students and delivers over 60 programs at the undergraduate, graduate, post-graduate, and doctoral levels, with the MBA housed within its Economics Department. Business classes at the Polish university are taught in English as well as Polish. The Polish business program is not AACSB International-accredited.

Students were invited to participate in the survey by their course professors who assured them that the survey was completely anonymous, that individual responses were impossible to track, and that nonparticipation would have no impact on any individual's final grade. The survey was posted online using Surveymonkey.com and was

available for ten days. A general reminder was given either orally or sent by email to all students to encourage survey participation. This was a simple statement saying that the online survey would be closing soon and that those interested should complete their survey by a given date.

RESULTS

One hundred and eleven MBA students completed the survey: fifty-nine from Polish university A and fifty-two from U.S. universities B and C combined. Females made up 79% of the Poland-based respondents and 67% of the U.S.-based respondents. The students from Polish university A were also much younger—between 21 and 29 years old—than their counterparts from both U.S. universities B and C, who included individuals in their 30s, 40s, and 50s.

Students from Polish university A had less work experience (with an average of 2.6 years) than their counterparts from U.S. universities B and C (who averaged 8.1 years). As a result, Polish university A students averaged one year of work with their current employer while U.S. university B and C students averaged 3.7 years with theirs. Finally, 63% of the students from Polish university A said that they were "almost done" with their MBA while only 19% of the students from U.S. universities B and C said the same, with almost 50% of the U.S. students stating that they were "just starting" their degree. Such data may reflect differences in full-time and part-time enrollment between the U.S. and Polish programs, as well as the accelerated nature of the Midwest university which allows students to take advanced disciplinary course work early in their studies.

To confirm the reliability of the scales used, a Cronbach's Alpha was computed for each group of questions. All resulting Cronbach Alphas were above 0.70, the generally accepted cut-off point for scale reliability (Nunnally, 1978), thereby confirming the reliability of all scales used. The value for each group is as follows: for the

- five items drawn from Dale, Mayer, & Fox (2010), .716;
- thirteen items on organizational barriers to sustainability (Lacy et al., 2010), .933;
- eight items on sustainability in the workplace, also drawn from Lacy et al. (2010), .946;

- thirteen items on MBA program characteristics (The Aspen Institute Business and Society Program, 2008), .878;
- six items from Net Impact & The Aspen Institute Center for Business Education (2009) measuring program preparedness for sustainability, .870; and
- seven items that measured program opportunities to study sustainability issues (Net Impact & The Aspen Institute Center for Business Education, 2009), .918.

Independent t-tests were conducted for all questions. As such, we found that MBA students across all three universities held similar views on the relationships between sustainability and corporate strategy. For example, no statistically significant differences between the groups were found when they were asked whether companies "that engage actively in sustainability management gain a long term competitive edge over rivals" (M_p = 3.89, M_{us}= 3.98) and whether companies "that engage actively in sustainability management have a distinctive position in their industry that cannot be easily replaced by major competitors" (M_p = 3.46, M_{us}= 3.79). However, when asked whether companies that engaged in sustainability management would 1) "have better profitability compared to rivals" (M_p = 3.44, M_{us}= 3.89) and 2) "have growth that exceeds that of major competitors" (M_p = 3.38, M_{us}= 3.70), the two groups differed at $p < .05$. As to whether sustainability is embedded in operational decision-making at the respondent's current place of employment, no statistically significant differences existed between the two groups—MBA students across all three universities held consistently similar perceptions that it was "sometimes true" that sustainability was included in strategy and operations decisions (M_p = 3.33, M_{us}= 3.44), global supply chain operations and practices (M_p = 3.15, M_{us}= 3.53), employee performance evaluations (M_p = 3.11, M_{us}= 3.21), and employee training (M_p = 3.07, M_{us}= 3.34).

A one-way analysis of variance (ANOVA) was conducted to test whether progress in one's MBA program and length of time at one's current place of employment—partitioned into three categories: just beginning (less than a year), established (one to five years), and long term (more than five years)—made a difference in the student's perception of either the role of sustainability on firm performance or the embeddedness of sustainability thinking in the student's current place of employment. No statistically significant differences were found.

Table 1 presents the mean scores (rank ordered) for the respondents' evaluation of perceived barriers to embedding sustainability at their

current place of employment. All thirteen items were perceived as being moderate to significant barriers, and when all of them were mean-centered, seven in particular—1) lack of financial resources, 2) lack of support from the board of directors, 3) ineffective communications, 4) lack of perceived benefits for integrating sustainability into company decision-making, 5) lack of skills/knowledge of middle-senior management, 6) employee resistance, and 7) lack of recognition from the financial markets of the firm's efforts to embed sustainability into decision-making—were above the mean center (grand mean = 3.43) and were perceived to be the strongest barriers to embedding sustainability in the respondent's job. Independent t-tests were also conducted on the sample, with no significant differences found between the two student groups.

	N	Mean	Std. Deviation
Lack of financial resources†	96	3.71	1.297
Lack of support from the board of directors	91	3.63	1.244
Ineffective communications	97	3.63	1.310
Lack of perceived benefits	93	3.58	1.245
Lack of skills/knowledge of middle-senior management	93	3.54	1.194
Employee resistance	91	3.53	1.158
Lack of recognition from the financial markets	85	3.46	1.041
Difficulty in engaging with external/stakeholder groups	86	3.40	1.077
Differing definitions of sustainability	93	3.35	1.139
Failure to recognize a link to value drivers	85	3.34	1.119
Competing strategic priorities	89	3.19	1.147
Complexity of implementing strategy across functions	86	3.17	1.098
Differing definitions of corporate social responsibility	89	3.08	1.254
† Scale: 1 = not a barrier at all, 5 = a very significant barrier			

Table 1: Perceived Barriers to Embedding Sustainability at Respondent's Place of Employment

Thus, for Section One of the survey, MBA students across the three universities were fundamentally similar in their attitudes regarding sustainability and its relation to corporate performance. In the survey's second section, however, the perceptions of the two groups differed markedly in the evaluation of their respective MBA programs vis-à-vis sustainability. As Table 2 indicates, MBA students from Polish university A, as compared to their counterparts from U.S. universities B and C, perceived that they had fewer opportunities to make sustainability-

related decisions in their courses, that faculty came across as being less interested in discussing sustainability issues in organizations, that fewer applications of a multi-stakeholder approach to decision-making were being made in courses, and that there was more reluctance to raise questions about sustainability in the classroom.

		N	Mean	Std. Deviation
I have many opportunities to practice responsible decision-making related to sustainability issues/problems as part of my graduate management education.†	USA	48	3.63*	.890
	Poland	53	2.77	1.086
I feel [that] business faculty in my program are interested in discussing the sustainability responsibilities of companies and organizations.	USA	51	4.04*	.720
	Poland	55	3.00	.861
I am free to raise issues related to the sustainability responsibilities of companies and organizations in class.	USA	52	4.10*	.721
	Poland	50	3.26	.828
When issues related to the sustainability responsibilities of companies are discussed in class, they are almost always raised by students.	USA	49	3.10	.872
	Poland	52	2.77	.962
All faculty in my program are interested in discussing the sustainability impacts of business decision-making.	USA	44	3.77*	.803
	Poland	50	3.04	1.087
My program uses a multi-stakeholder approach to analyzing the impacts of business decisions.	USA	42	4.02*	.749
	Poland	46	2.83	1.039
* $p < 0.05$. † Scale: 1 = strongly disagree, 5 = strongly agree				

Table 2: MBA Student Perceptions of Opportunities to Learn about Sustainability in Their MBA Program

Respondents also differed significantly in their evaluation of how well their respective MBA program developed specific intellectual and behavioral competencies related to sustainability. With regard to all dimensions explored—systems thinking, effectively communicating technical ideas, having a stakeholder perspective, relating sustainability to the core business, understanding regulations, working for the common good, and cross-disciplinary problem-solving, students from U.S. universities B and C consistently said that their MBA was doing a better job in helping them develop these skills compared to what students from Polish university A claim (see Table 3).

		N	Mean	Std. Deviation
Communicate [all] the technical aspects of sustainability to a variety of audiences†	USA	48	3.02***	1.062
	Poland	51	2.25	.891
Relate sustainability elements to a company's core business	USA	51	3.27***	.961
	Poland	56	2.45	.851
Understand the effects of global and national regulatory frameworks on a business	USA	49	3.33**	1.068
	Poland	53	2.68	.915
Communicate sustainability imperatives to external and internal stakeholders	USA	49	3.14***	1.061
	Poland	51	2.39	.940
See the "big picture" and have a "holistic view of the world"	USA	50	3.36***	1.102
	Poland	50	2.52	.953
Integrate societal needs into business decisions	USA	51	3.59*	1.023
	Poland	53	3.04	.960
Use problem-solving approaches from outside business, such as the principles of design, to develop business strategies	USA	50	3.46***	1.054
	Poland	54	2.63	1.069
* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. † Scale: 1 = not well at all, 5 = excellently				

Table 3: MBA Student Perceptions of How Well Their MBA Program is Developing Competencies Related to Sustainability

Statistically significant differences also existed between students at Polish university A and those at U.S. universities B and C in their perceptions of how often various pedagogies commonly used in MBA programs furthered their understanding of sustainability. Students from Polish university A consistently said that they had fewer courses, case studies, and practicum opportunities concerning sustainability as well as fewer lectures from sustainability professionals, applied projects that required them to "solve" a sustainability issue at their place of employment, and opportunities to hear science, design, and engineering professionals speak on sustainability topics than did their peers from U.S. universities B and C (see Table 4).

Lastly, we turn to the issue of becoming a sustainability advocate (see Table 5). Advocacy is generally thought of as giving verbal support for a cause or position; McConnell (2004) notes that it "is about moving from 'what is' to 'what should be' and that it is accomplished by, among other things, drawing attention to underlying or 'submerged' issues,

influencing public attitudes, and changing policies and practices" (p. 26). Sustainability advocates for McConnell, therefore, are change agents within a company because they want to move a unit, department, strategic business unit (SBU), or an entire firm from "what is" vis-à-vis sustainability to "what should be." A sustainability advocate can also act as the firm's conscience, reminding others of the importance of considering the sustainability implications of decision-making. In this light, MBA students from Polish university A and those from both U.S. universities B and C differed on the impact that becoming a sustainability advocate would have on their careers. MBA students from both U.S. universities B and C reported that being a sustainability advocate would not create undue problems at work and would, in fact, provide career and leadership opportunities. In contrast, more MBA students from Polish university A than from U.S. universities B and C thought that they would have problems at work and fewer career opportunities if they became a strong sustainability advocate. Table 5 thus raises some important issues related to leadership, strategic management, management education, and sustainability which we will discuss in the next section.

		N	Mean	Std. Deviation
Analyze case studies with sustainability and value creation as their main focus†	USA	53	3.51**	.993
	Poland	57	2.68	.948
Take a course whose main focus is sustainability	USA	53	3.26**	1.112
	Poland	57	2.68	.909
Listen to business professionals speak about sustainability topics	USA	53	3.09**	1.079
	Poland	56	2.57	1.110
Listen to science, design, and engineering professionals speak about sustainability topics	USA	53	2.92*	.978
	Poland	57	2.23	1.018
Have practicum / applied learning experiences related to sustainability issues	USA	53	3.11**	.993
	Poland	57	2.18	1.151
Collaborate with science, design, and engineering students on sustainability projects	USA	53	2.68*	1.105
	Poland	57	2.14	1.141
Take a course that requires a sustainability project for the place where you currently work in	USA	53	2.75*	1.072
	Poland	57	2.23	1.069
* $p < 0.05$; ** $p < 0.01$. † Scale: 1 = no opportunity to study, 5 = extensive opportunity to study				

Table 4: MBA Student Perceptions of the Degree to which Various Pedagogies Used in Their MBA Program Furthers Their Understanding of Sustainability

		N	Mean	Std. Deviation
Have problems at my current place of work†	USA	44	2.34*	1.055
	Poland	44	2.80	.954
Limit my career opportunities in the next 3–5 years	USA	45	2.24***	.981
	Poland	48	3.17	.859
Be part of my industry's leadership	USA	46	3.87**	.833
	Poland	50	3.30	.839
* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$. † Scale: 1 = strongly disagree, 5 = strongly agree				

Table 5: MBA Student Perceptions of the Effect of Being a Sustainability Advocate on One's Career

DISCUSSION

Our data suggest the need to close three gaps so MBA programs can develop the talent CEOs say they need for embedding sustainability into their firms' core strategies (Lacy et al., 2010; Hayward et al., 2013). These three perceived gaps are: between students wanting more in-depth study of sustainability versus the dearth of opportunities currently provided in their programs (Gap 1); between students wanting engaged faculty members who are fully committed to teaching sustainability topics versus current in-class experiences of faculty perfunctorily presenting sustainability issues (Gap 2); and between students' normative understanding that sustainability improves corporate performance versus their assessment that their MBA programs are not fully developing the sustainability competencies needed to link performance outcomes with sustainability (Gap 3). This last gap also results in the students' perception that they are inadequately prepared to deal with workplace barriers that prevent sustainability from becoming a central, organizational concern.

Gap 1: Current program, course, and pedagogical focus vs. perceived needs. Our findings suggest that MBA students from the three universities studied want more opportunities to learn about sustainability (see Table 2) than what their actual in-class activities or cumulative in-program experiences provide (see Table 4). Data from Table 4 also suggest that MBA students from Polish university A want more active and applied learning opportunities. As for students from U.S. universities B and C, we think that they can benefit from service learning and student partnerships with a broad range of societal stakeholders. In this light, courses and even an entire curriculum that stress experiential learning can provide students with an excellent laboratory for applied

sustainability education (Marques, Trevisan, & Cougo da Cruz, 2016). Student engagement with sustainability issues would then move from learning "for the community" to learning "with the community" (Brundiers, Wiek, & Redman, 2010: 311). Emphasizing action-oriented, applied, and project-based learning opportunities (Baden & Parkes, 2013; Figueiró & Raufflet, 2015; Tilbury, 2011) in all three universities' programs would therefore communicate to students that their business school is a laboratory where they can gain competence and confidence in developing their sustainability mindset (Rimanoczy, 2014).

It is unfortunate, then, that most MBA programs integrate sustainability into core classes either through an ad hoc approach (perhaps also directly related to Gap 2) or by an incremental, "add on" method (Figueiró & Raufflet, 2015). As noted in Table 3, MBA students from Polish university A identified more opportunities for program improvement than did students from U.S. universities B and C. The former also consistently evaluated their program as doing "somewhat well" in terms of helping them communicate all aspects of sustainability to stakeholders, providing a holistic view of the world, and using problem-solving techniques from outside business. Students from U.S. universities B and C, on the other hand, indicated that their MBA program was doing "very well" on the same items. Our research thus supports Barber et al. (2014) in showing that sustainability is difficult to learn because it is both an inter- and a cross-disciplinary topic:

> Sustainability challenges require students to learn sharp critical thinking skills, develop complex systems-based perspective [sic], and engage in difficult but necessary discussions about values. It requires a new way of thinking as commonly accepted paradigms and assumptions must be examined deeply and often changed. (p. 479)

Data from Table 4 further suggest that MBA students from Polish university A, in addition to wanting more active and applied learning opportunities, also seek out more cases on, and more exposure to, expert multidisciplinary perspectives on sustainability. Likewise, the mean scores for MBA students from U.S. universities B and C also point to a need for improved programs. Table 4 data thus confirms previous research (Steinemann, 2003; Rowe, 2007; Sipos, Battisti, & Grimm, 2008) in showing that "education for sustainable development calls for pedagogical innovations that provide interactive, experiential, transformative, and real-world learning" (Brundiers et al., 2010: 309). As such, the gaps between program design, courses, and teaching strategies noted above support Naeem and Neal's (2012) conclusion that multiple

opportunities for successfully integrating sustainability into courses and curricula currently exist in business programs.

Gap 2: Differences among faculty interests and focus. Extensive research suggests that the professor matters (Bain, 2004). "What teachers think, what teachers believe, and what teachers do at the level of the classroom ultimately shapes the kind of learning that [students] get" (Hargreaves & Fullan, 1992: ix). This sentiment is often reinforced in the sustainability literature (Ceulemans, De Prins, Cappuyns, & De Coninck, 2011; Fisher & McAdams, 2015; Naeem & Neal, 2012). Again, we cite Barber et al. (2014): "Even though many faculty realize the growing significance of sustainability education in business schools, they have not integrated it into their teaching activities because of apathy, lack of appropriate teaching resources or other reasons" (p. 477).

Bridging this divide between finance-oriented "show me the numbers" faculty/managers and those faculty/managers who focus on "enduring" success (Ignatius, 2015; Werner & Stoner, 2015) suggests the need for creativity in business-faculty partnerships. For example, faculty members and managers could create, among others, innovative and interactive co-development approaches such as faculty working in businesses, non-profits, and civil society organizations as well as researching internal and external sustainability issues or CEOs becoming more closely involved in management education (Toffel, 2016). Through extended immersion in each other's worlds, business and faculty leaders might reconstruct disciplinary knowledge within a sustainability framework while becoming sustainability advocates themselves.

Indeed, the second data item from Table 2, "I feel [that] business faculty in my program are interested in discussing the sustainability responsibilities of companies and organizations," indicates that students from Polish university A perceive their faculty as ambivalent about sustainability issues while students from U.S. universities B and C perceive their faculty as relatively more engaged with the topic. When faculty members are seen as relatively disinterested in sustainability, they are less likely to emphasize it in their teaching. Creativity in faculty member-business partnerships as described above could therefore help ameliorate our sample's perception of disengaged faculty members.

Gap 3: Difference between understanding sustainability advantages and putting competencies into practice. As noted above, students from Polish university A, U.S. university B, and U.S. university C all agreed that sustainability had positive benefits for firms. Yet they also agreed that their MBA programs were not fully developing their core competencies around sustainability.

Wiek et al. (2011) define a competence as "a functionally linked complex of knowledge, skills, and attitudes that enable successful task performance and problem-solving" (p. 204). Competencies are relevant both in educational program design and in businesses. From an educational/curricular/course perspective, they are linked with learning outcomes (Fink, 2013; Hesselbarth & Schaltegger, 2014). By clearly defining competencies, faculty members and administrators have "the reference scheme for transparently evaluating student learning and teaching effectiveness" (Wiek, Withycombe, & Redman, 2011: 204). In the same vein, competencies within organizations are linked with core operating tasks and are often used to recruit and evaluate managerial talent (Boyatzis, 1982). With its emphasis on human behavior, a specific competency thus translates knowledge into observable action that can be evaluated.

The competencies identified in Table 3 (e.g., communicating effectively with various stakeholders, working with and managing cross-disciplinary teams, including societal needs in decision-making, and developing a holistic/systems/enterprise way of thinking about sustainability) parallel Wiek et al.'s (2015) synthesis of five core sustainability competencies: 1) systems thinking, 2) futures (or anticipatory) thinking, 3) values (or normative) thinking, 4) strategic (or action-oriented) thinking, and 5) collaboration (or interpersonal) competence. These sustainability competencies also seem to be very much like the six competencies defined by Rubin and Dierdorff (2009) as being fundamental to managerial work, that is, managing 1) decision-making processes, 2) human capital, 3) strategy and innovation, 4) the task environment, 5) administration and control, and 6) logistics and technology.

In this light, data from Table 3 indicate that students from universities A, B, and C shared similar doubts about whether their respective programs were fully developing core competencies around sustainability. Indeed, while more students from U.S. universities B and C than from Polish university A reported that their MBA programs provided them with opportunities to develop some sustainability-related competencies, neither group asserted that their program helped them develop mastery.

Two specific items in Table 3 also stood out for us. The first concerns our question, "How well is your graduate program preparing you to relate sustainability issues to a company's core business" (usually understood in terms of a value chain)? Porter and Kramer (2011) suggest that the traditional value chain creates too narrow a focus on short term actions. As an alternative, they advance the notion of shared value, which involves "creating economic value in a way that also creates value for society by addressing its needs and challenges" (Porter & Kramer, 2011: 64). Drayton

and Budinich (2010) also propose an expanded value chain that includes collaboration among companies, social entrepreneurs, NGOs, and others to create economic, social, and ecological value (Figueiró, Bittencourt, & Schutel, 2016). They call it a "sea-change in the way society's problems are solved" (Drayton & Budinich, 2010: 58).

In addition to this, Laszlo and Zhexembayeva (2011) provide a roadmap of the shift required in corporate strategic perspectives to create sustainable businesses. In their text, Stead and Stead (2014) detail how to weave sustainability into each and every strategic management concept and process. In this light, we note that the majority of student responses from Polish university A suggest that current programs are unlikely to provide a strong foundation for future leaders that are needed in a dynamic market such as Poland.

The second item from Table 3 that stood out for us relates to the ability to use "a multi-stakeholder approach to analyzing the impacts of business decisions." Students from Polish university A did not think that their graduate business program was sufficiently developing this competency in them, while students from both U.S. universities B and C felt that they were learning to use stakeholder analysis. This finding aligns with research on Polish management education which shows that Polish business schools have had difficulty adopting contemporary management techniques after 1989 (Kowalski, 2008; Skuza, Scullion, & McDonnell, 2013). Thus, while approaches to business school subjects among Polish faculty and students tended to be traditional, U.S. students and faculty appear to be transitioning to a more inclusive stakeholder mindset. Indeed, this advance toward stakeholder inclusion is what underpins the acceptance of sustainability.

On a final note, Table 1 indicates that students from all three universities found meaningful barriers to sustainability integration at their jobs. Lacking the confidence that they have the competencies required to deal with these many workplace barriers means, therefore, that sustainability strategies will be less than fully integrated into their companies. This implication leads us to wonder in turn about the effectiveness of management education in developing managerial talent that has the skills, abilities, and knowledge to address these barriers. Our research findings indicate that while students perceived significant differences within their respective programs, the programs themselves had low mean scores relative to barriers. As such, an overlapping responsibility for developing and implementing sustainability competencies exists between corporate and faculty leaders. In the end, the net result of these three gaps is that neither MBA students from Polish

university A nor from U.S. universities B and C envision themselves as strong sustainability advocates.

Being a sustainability advocate. We posit that becoming a sustainability advocate should be a primary outcome of management education focused on sustainability. Yet, as our data suggest, three gaps work collectively to thwart that development. The lack of opportunities to practice and gain experience with sustainability issues (Gap 1) was influenced by faculty members' course design decisions that dealt superficially with such concerns or omitted them altogether (Gap 2). Such uneven coverage leads students to conclude that their sustainability competencies are insufficient. The link is clear, however, between having the competencies needed for a job or task and the self-efficacy required to complete it successfully: competencies are a requisite condition for accomplishments, and both student groups said that they were inadequately prepared to deal with the multiple barriers that prevent sustainability from becoming a central workplace concern (Gap 3).

On a more positive note, our data also suggest that students from Polish university A and U.S. universities B and C appreciate the connection between good sustainability practices and corporate performance, which in turn mirrors the ESG-ranking (Ignatius, 2015). Students intellectually perceive these benefits: respondent agreement with statements such as "Companies that engage actively in sustainability management have better profitability compared to rivals" (M = 3.65), "Companies that engage actively in sustainability management have growth that exceeds that of major competitors" (M = 3.60), and "Companies that engage actively in sustainability management gain a long term competitive edge over rivals" (M 3.94) was strong. Unfortunately, however, agreement with these normative statements about the impact of sustainability on organizational performance did not uniformly translate into student commitments to become sustainability advocates (see Table 5). Students from U.S. universities B and C saw more career opportunities—or perhaps fewer career barriers—to become a sustainability advocate than did students from Polish university A.

Landrum's (2017) recent work on understanding sustainability models vis-à-vis the sustainability spectrum (very weak, weak, strong, and very strong sustainability) also sheds some light on this gap. She discovered that most of the 22-stage development models for sustainability reported in the academic literature emphasize weak sustainability. Landrum and Ohsowski (2017) further solidify this point: their review of reading lists for 81 introductory sustainability business courses from 51 U.S. universities and colleges revealed that the ponderance of the course material emphasized weak or very weak sustainability, with few readings

emphasizing a strong or very strong approach. Teaching students weak sustainability, however, will never develop the type of leaders that can bring organizations to a sustainable future, leaders which, in our view, are strong sustainability advocates. As Landrum (2017) has said, referring especially to professors in their roles as teachers and researchers, "This is our own fault" (p. 19).

RESEARCH LIMITATIONS AND FUTURE STUDY

As suggested above, our research is subject to a number of limitations. Our sample size, for one, is relatively small. A larger sample might reveal additional or different "gaps" which might further influence the redesign of management curricula that explores sustainability topics in depth. Nonetheless, despite our small *n*, we believe our study raises important questions about the efficacy of management education curricula in developing the managerial talent that CEOs say they need (i.e., graduates who can deal competently with sustainability issues).

With regard to demographics, our focus on mid-tier, non-elite institutions may reveal student perceptions that differ from those found at lower or higher tier business schools. Our respondents also included a preponderance of women; how, then, do gender differences affect results, if at all? Also, there could be a benefit to focusing on graduates who had completed or are about to complete their programs.

Much more attention could also be paid to cross-cultural aspects. To what extent, for example, are seeming differences in responses explainable by cultural diversity? National and organizational culture may be hidden variables that affect student perceptions (Huang & Wang, 2013; Lee & Herold, 2016). Studies that specifically measure the residual effects of country or organizational culture on sustainability efforts would thus advance our understanding of the moderating and/or mediating effects of culture on sustainability practices and mindsets (Rimanoczy, 2014; Schein, 2015).

Finally, there was no "not important" option in our questionnaire itself, which could suggest why some respondents inferred some bias in our queries.

Such limitations suggest a possible future research agenda. Larger samples, more countries, different program levels, explicit attention to culture, and replication could all improve the reliability of results.

CONCLUSION

We chose a case study approach in an attempt to shed some modest empirical light on whether management education in one Polish and two U.S. MBA programs was developing in students the capabilities to become sustainability advocates. We also decided to study non-elite universities in both countries because the large majority of MBA programs offered globally are from this institutional type, and ours is among them.

As noted in our introduction, CEOs claim to envision a future where sustainability will fundamentally transform their industries (Hayward et al., 2013; Kiron et al., 2013; Lacy et al., 2010). They are thus looking for managerial talent that can not only help lead large scale organizational change but also embed sustainability thinking and analysis into core business strategy (Lubin & Esty, 2010; Metcalf & Benn, 2013). As such, we wanted to know whether students were being adequately educated to manage the sustainability challenges that CEOs say they foresee as central to the long-term success of their firms. Specifically, we developed a questionnaire to delve into the following four issues:

1. the link between sustainability and corporate performance;
2. barriers to embedding sustainability practices in the MBA student's current job;
3. effects of becoming a sustainability advocate on one's career; and
4. the efficacy of the three MBA programs studied in fostering leadership perspectives and skills related to sustainability.

When we explored the link between sustainability and corporate performance, our findings suggested that MBA students at the three universities we studied, even allowing for demographic differences, held similar views related to sustainability and long term competitive advantage, and on whether sustainability confers a competitive advantage to any firm. That said, all the mean scores were "mid-range" or neither especially good nor especially bad.

Our study also investigated the barriers to embedding sustainability practices in the MBA student's current job. Thirteen items drawn from previously published research (Lacy et al., 2010) were tested as potential obstacles to sustainability, including lack of financial resources, lack of support from the Board, lack of perceived benefits, and differing definitions of sustainability. Once again, mean scores hovered in the

mid-range, suggesting that sustainability needs to be less at the "pilot stage" and more integrated into the strategy process.

Unique to this research were questions designed to understand the effects of becoming a sustainability advocate on MBA students' careers. The students from U.S. universities B and C reported that being a sustainability advocate would not create undue problems at work and would, in fact, provide career and leadership opportunities. We also found that more MBA students from Polish university A than from U.S. universities B and C perceived both more problems at work and limited career opportunities as consequences of becoming sustainability advocates.

In this light, the issue of advocacy is closely linked with the issue of leadership—sustainability leadership is needed if organizations are to embed sustainability into corporate strategy (Ferdig, 2007; Gerard, McMillan, & D'Annunzio-Green, 2017). We therefore studied the efficacy of the three MBA programs in fostering leadership perspectives and skills related to sustainability. Some differences between MBA students from Polish university A and those from U.S. universities B and C appeared, with U.S. students consistently saying that their program better prepared them with respect to, for example, having a stakeholder perspective and relating sustainability to the core business. Mean scores for students from all three universities were once again in the mid-range.

We also identified three major gaps or disconnects between stated goals and perceived needs. For Gap 1 (current program focus vis-à-vis students' perceived needs), our findings suggest that neither in-class activities nor cumulative in-program experiences currently satisfy students' desire for more opportunities to study sustainability (Cullen, 2017).

For Gap 2 (current faculty focus vis-à-vis company needs), our research supports David, David, and David's (2011) conclusion that "an ongoing gap [is occurring] between what is being taught in business schools compared to what is actually needed by companies" (p. 59). For one, our observations of faculty attitudes uphold Lee and Brackley's (2017) conference summation that short-term financial considerations tend to outweigh all others.

For Gap 3 (current understanding of sustainability advantages vis-à-vis implementing sustainability practices), all the students agreed that sustainability practices could provide positive benefits for firms. They also agreed, however, that their MBA programs were not fully developing their competencies around sustainability (Figueiró & Raufflet, 2015; Hesselbarth & Schaltegger, 2014; Wiek et al., 2011).

To summarize, we have identified issues and gaps faced by corporate leaders and MBA faculty. Major challenges thus remain—we concur with Cullen (2017) when he said, in his recent bibliometric review of research about educating management students for sustainability, that

> most of the research appears to attempt to address management education *providers* rather than students (recipients). Sustainability and management education research needs to enhance our understanding of how students engage with sustainability-oriented management education programmes.… (p. 438, italics in original)

With its focus on MBA student experiences in Polish university A and U.S. universities B and C, our study thereby represents both a modest step toward understanding sustainability from the student perspective and an early effort to progress further in creating an educational foundation for sustainable practices.

Authors' note: The three MBA/graduate business programs still existed at the time of data collection for this study. Over the past year, however, the MBA program at university B was forced to close.

APPENDIX A: SELECTED EXAMPLES OF QUESTIONS DERIVED FROM PREVIOUS RESEARCH AND USED IN OUR RESEARCH QUESTIONNAIRE

Dale, Mayer, & Fox (2010)	Companies that engage actively in sustainability management have better profitability compared to rivals. Companies that engage actively in sustainability management gain a long term competitive edge over rivals. Companies that engage actively in sustainability management have a distinctive position in their industry that cannot be easily replaced by major competitors.
The Aspen Institute Business and Society Program (2008)	I feel [that] business faculty in my program are interested in discussing the sustainability responsibilities of companies and organizations. All faculty in my program are interested in discussing the sustainability impacts of business decision-making. My program uses a multi-stakeholder approach to analyzing the impacts of business decisions.

APPENDIX A: SELECTED EXAMPLES OF QUESTIONS DERIVED FROM PREVIOUS RESEARCH AND USED IN OUR RESEARCH QUESTIONNAIRE

Net Impact & The Aspen Institute Center for Business Education (2009)	My MBA program is preparing me to be able to • relate sustainability elements to a company's core business; • communicate sustainability imperatives to external and internal stakeholders; and • see the "big picture" and have a "holistic view of the world."
Net Impact & The Aspen Institute Center for Business Education (2009)	My MBA program provides opportunities to • analyze case studies with sustainability and value creation as their main focus; • take a course whose main focus is sustainability; and • listen to business professionals speak about sustainability topics.
Lacy et al. (2010)	To what degree is the following a barrier to implementing a companywide approach to sustainability at work? • Complexity of implementing strategy across functions • Competing strategic priorities • Differing definitions of sustainability • Lack of support from the board of directors • Lack of perceived benefits

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FAITH-BASED SOCIALLY RESPONSIBLE ENTERPRISES
SELECTED PHILIPPINE CASES

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Abstract. Faith-based organizations (FBOs) have long played a role in international development and are increasingly involved in sustainability initiatives. Since they are motivated by a distinctive set of values, have particular modes of operation and governance, and hold a unique place within communities and the larger society, these organizations are poised to be distinctively successful and sustainable. In the case of the Philippines, the situation is unique in the sense that there are a large number of Christian business leaders and entrepreneurs who put their faith "to the plow." Based on a review of the literature on faith-based social enterprises as well as on an in-depth descriptive analysis of three sample ventures from the Philippines, this study proposes a descriptive framework for their success and sustainability which consists primarily of two elements: a) Christian social capital and b) spiritual leadership.

Keywords: faith-based organizations; third sector organizations; Christian social capital; spiritual leadership

1. INTRODUCTION

Organizations are being called upon to take responsibility for the ways their operations impact societies and the natural environment. It is no longer acceptable for a corporation to experience economic prosperity in isolation from those agents impacted by its actions. Moreover, we are without a doubt witnessing today a remarkable growth in the so-called "third sector," i.e., in socio-economic initiatives which belong neither

to the traditional private for-profit sector nor to the public sector. These initiatives generally derive their impetus from voluntary organizations and operate under a wide variety of legal structures, and they represent in many ways the new or renewed expression of civil society against a background of economic crisis, the weakening of social bonds, and the difficulties of the welfare state (D'Amato, Henderson, & Florence, 2009; Defourny, 2001). Nevertheless, the surge in the creation and growth of such "third sector enterprises" notwithstanding, one could say that descriptive research on their successes and challenges as well as on the factors accounting for their effectiveness and sustainability seems wanting. For example, explanations of the differences between faith-based and secular social service organizations across the globe are largely lacking in the social enterprise literature (Kerlin, 2010).

If enterprises are faith-based, are there any differences in their effectiveness and sustainability? If so, what accounts for these differences? Christian missionaries treading the globe during the 17th century up to the late 1800s eventually gave rise to Christian humanitarian agencies intent on meeting not only the spiritual but also the physical needs of their beneficiaries. Governments have also opened themselves up to cooperation with the private religious sector, in part because of disenchantment with public programs and an increasingly widespread view that acute social problems have moral and spiritual roots. Acknowledging, therefore, that such problems arise from both unjust socioeconomic structures and misguided personal choices, scholars, journalists, politicians, and community activists are calling attention to the vital and unique role that religious institutions play in social restoration.

Analysis of the outcomes of faith-based third sector organizations is still wanting, however, even though available evidence suggests that some of their services may be more effective and cost-efficient compared to similar programs from secular society and government. These organizations are motivated by a distinctive set of values, have particular modes of operation and governance, and hold a unique place within communities and the larger society. By way of self-selection, their managers are committed to the "cause" rather than simply to maximizing profits or managerial efficiency. For example, the leaders of Economy of Communion (EoC) businesses, which are growing in number all over the world, act in such a way that helping the poor is viewed not as an optional appendage to the *religious* act of praying but as an expression of spirituality engaging other dimensions of social and economic life (Gold, 2003). This article thus attempts, through the descriptive analysis of selected Philippine cases of faith-based enterprises, to propose a descriptive framework for their success, after which implications for sustainability will be drawn.

2. LITERATURE REVIEW

2.1 Third Sector Organizations

Third sector organizations (TSOs)—voluntary, non-profit, non-government, people's, community-based, and civil society organizations as well as cooperatives—are growing rapidly in many countries all over the world. One of the defining characteristics of many TSOs is that they are "values-based" organizations, and among them we find an increasing number of economic initiatives called "social enterprises" which bear witness to the development of a new entrepreneurial spirit focused on social aims. Such enterprises may be regarded as a subdivision of the *third sector*; however, they also set out a process, a new (social) enterprise spirit which takes up and refashions older experiences. In this sense, they reflect a trend, a groundswell involving the whole of the third sector (Nevile, 2009; Defourny, 2001).

We rely increasingly on TSOs to address ever-growing human and community needs with ever-decreasing resources. By "third sector," we are referring to those community-based organizations that operate exclusively for charitable, community-building, advocacy, or educational purposes and are neither traditional for-profit businesses (first sector) nor governmental agencies (second sector). TSOs are expected to remain steadfast in their missions while smultaneously meeting ever-higher standards of performance in a rapidly changing environment. The impetus for their work comes from a specific religious or ethical base and their distinctive accountability mechanism is such that participants genuinely internalize values shared by others within their network, with critiques of their behavior based on those values.

In liberal welfare states such as Australia and the United Kingdom, TSOs concerned with broad public benefit objectives, such as the alleviation of poverty, have been involved in the delivery of social services for many years. Such organizations, however, now play a more central role in doing so than they did thirty years ago. In their case, moreover, value displacement is not an inevitable consequence of reliance on external funding: where there is a conflict of values, TSOs are at times prepared to walk away from external funding sources. Their accountability regime focuses more on intentions, and relies more heavily upon mutual monitoring and reputational sanctioning within a cooperative network of like-minded entities as its characteristic mechanism for achieving accountability (Evans, Raymond, & Levine, 2014; Goodin, 2003; Nevile, 2009).

According to EMES (*L'émergence des Entreprises Sociales*), the defining characteristics of the "ideal type" of social enterprise include:

1. continuous activity producing goods and/or selling services;
2. a high degree of autonomy;
3. a significant level of economic risk;
4. a minimum amount of paid work;
5. an explicit aim to benefit the community;
6. an initiative launched by a group of citizens;
7. decision-making power not based on capital ownership;
8. a participatory nature, which involves the persons affected by the activity; and
9. limited profit distribution (Defourny, 2001: 16–18).

The European definition allows at least some profit distribution due mainly to the inclusion of cooperatives in the definition. Social enterprise in Europe is also viewed as belonging to the "social economy" where social benefit is the main driving force. Indeed, the main organizations in the social economy include cooperatives, mutual organizations, associations, and foundations.

Social enterprise is therefore thought of as something new and distinct from classical business and traditional non-profit activity, combining to different extents elements of social purpose, market orientation, and financial performance (Galera & Borzaga, 2009). All told, it is possible to agree on the following definition of social enterprises: they are organizations whose mission is to bridge social opportunity into sustainable reality innovatively, effectively, and efficiently (Defourny, 2001).

These enterprises represent a common feature of the European social and economic environment. Although not yet in use in legal texts or other official documents in most countries, the expression "social enterprise" is a useful synthesis for several terms used at the national level, such as "social economic enterprises" (Austria), "socially-aimed enterprises" (Belgium), "co-operatives with social aims" (Spain), and "social co-operatives" (Italy and Portugal). These organizations are found in almost all European countries but have major differences from those involved in work integration, both as to the number of enterprises and the types of service supplied. Social and community care services provision, for instance, represents a broad field of activity—a significant number of social enterprises have been established to provide new services or to respond to groups of people with needs not recognized by public authorities or who have been excluded from public benefits. Many of these activities were started independently by groups of citizens with

little or no public support, and eventually received partial or even total funding from state or local authorities after some years as the services provided were acknowledged to be of public interest. Moreover, the resulting dependence on public funds did not seem to eliminate their autonomy completely; indeed, there are many social enterprises that are funded by both public authorities and paying customers, or that combine public funds with resources from donations and volunteers. A growing number of services are also provided by social enterprises that secure the necessary public resources by participating in calls for tenders, thereby competing with other TSOs and for-profit enterprises (Defourny, 2001).

The third sector's motivational distinction shows up mainly in their altruistic concern for the "cause." As mentioned above, managers of TSOs are typically committed to the "cause" rather than simply to maximizing profits or managerial efficiency, a fact central to the conventional analysis of why, in a world of imperfect information and incomplete contracting, there seems to be greater trust in, say, non-profits rather than in profit-seeking corporations: they may not be as efficient, but at least they internalize the "right" goals rather than serve ones merely as a means to profit for themselves. Such a comparative difference shows up even more keenly when the TSO is faith-based—for instance, sentiments of bureaucratic restrictions are usually aired out in meetings of secular TSOs compared to their religiously affiliated counterparts who "do the real work" (the comparative sustainability advantages for the more religiously affiliated organizations shall be discussed below) (Goodin, 2003; Caldwell, 2012).

Among the many TSOs out there, non-governmental organizations (NGOs) have over the past several decades pioneered financing for the poor to help alleviate their poverty and improve their socioeconomic conditions. Defined as the "provision of financial services to low-income clients, including the self-employed" (Ledgerwood, 1999: 1), microfinance services may include savings, credits, insurance, payments, and social intermediation, and are performed by a variety of institutions such as credit unions, savings and loan cooperatives, commercial and government banks, and NGOs. Many thus view microfinance as an instrument of development beyond being just "banking for the poor"—at its heart is the belief that poverty can be reduced and eventually eliminated through provision of credit to those too poor to have access to the formal financial system. Such needs are tremendous, with even the dependence of NGOs on donor financing hindering the sustainability and continuity of their activities. In the case of microfinance institutions (MFIs), however, one can see gradual progress toward sustainable, profitable, and self-funding organizations: they have been able to attract equity and their vulnerability has decreased, sometimes to

lower than that of commercial banks. For MFIs, the client relationship necessitates an intimate knowledge of the client's business and active collaboration to ensure the client's success. Security, on the other hand, is characterized mainly by collective monitoring as there is a huge client base of individuals who need to be tied to a group or groups (Koveos & Randhawa, 2004).

All told, the social enterprise movement is growing and gathering supporters across the globe as an innovative approach to business activity, offering disadvantaged and underserved populations a path to human development and economic prosperity. Businesses, governments, and NGOs are increasingly recognizing that their participation in these initiatives can lead to substantial benefits for such populations, all while simultaneously providing opportunities for income generation (Nielsen & Samia, 2008).

2.2 Faith-based Organizations

Christian missionaries treading the globe from the 17th century to the late 1800s were the precursor humanitarians whose sense of Christian duty to "go into all the world and preach the good news to all creation" (Mk. 16:15) inspired their work. Their missionary efforts also gave rise to Christian humanitarian agencies intent on meeting not only the spiritual but also the physical needs of their audiences. In addition to spreading the Gospel, therefore, the first religious aid agencies that developed in conjunction with the Protestant evangelical movements and the birth of missionary organizations were dedicated to assisting ideologically and economically impoverished peoples and bearing the torch for Western civilization. This same sense of duty is present today in modern humanitarianism, the offspring of nineteenth-century Christian thought (Thaut, 2009).

Faith-based organizations (FBOs) are thus "formal organizations whose identity and mission are self-consciously derived from the teachings of one or more religious or spiritual traditions and which operate on a nonprofit, independent, voluntary basis to promote and realize collectively articulated ideas about the public good" (Berger, 2003: 16). They have long played a role in international development and are increasingly involved in sustainability initiatives. Particularly noteworthy as well is their success in effecting sustainable and holistic change in many countries due to their rootedness in the community, the social capital they help produce, and the respect they receive from the people. In many parts of Africa, for example, Christian organizations and agencies have long been involved in development work, driven by charitable impulses, evangelical zeal, and, to some extent, by complicity with the

colonial machine. Such work began with mission stations that offered schools and health clinics, and which expanded over time beyond education and health care to include agriculture, water supply programs, and many other projects (Thaut, 2009; Moyer, Sinclair, & Spaling, 2012).

Significant FBO involvement in environmental sustainability work is rather recent, however, although faith communities are taking a growing interest in these issues and engaging in diverse initiatives around the globe. In the United States, for example, the Evangelical Environmental Network and the National Religious Partnership for the Environment are working to influence public policy while engaging local congregations to embrace sustainable lifestyles. In Canada, various Christian denominations collaborate on justice initiatives through Kairos, an organization that works to address eco-justice issues such as climate change and energy. Faith groups are also actively addressing environmental concerns in Sub-Saharan Africa, where an interfaith alliance of Zimbabwean Christians and traditional practitioners has engaged in extensive tree planting projects. The Faith and Earthkeeping Project, under the auspices of the World Wide Fund for Nature-South Africa, promotes environmental protection, conservation, and sustainable resource use at various levels (Moyer et al., 2012).

While they share in many of the attributes, strengths, and weaknesses of secular NGOs, FBOs are distinct in their motivation, modes of operation, and place within communities and society. For instance, they are often firmly and intimately rooted within local communities through their ties to local religious establishments, affording them a high level of trust and accountability. In fact, available evidence suggests that some of their services may even be more effective and cost-efficient than similar secular and government programs. They also tend to adopt an approach that goes beyond basic economic advancement or environmental protection, incorporating the social, environmental, spiritual, and ethical in one complete package (Moyer et al., 2012; Sider & Unruh, 1999).

FBOs differ significantly from their more secular counterparts across several aspects, including funding sources and preferences, decision-making tools, organizational culture, practices, leadership, and staffing characteristics. Some proponents of expanding faith-based social service delivery, for example, argue that religiously-based groups provide more effective social services than secular agencies do because their religious character motivates a supportive and caring attitude on the part of staff and volunteers, one that is transmitted through relationally-based programs aimed at transforming lives (Ebaugh, Pipes, Chafetz, & Daniels, 2003). They are also particularly strong in effecting sustainability through

religious and ethical social capital, connectedness to communities, and an integrated approach to development and environment. As such, both benefactors and beneficiaries in general develop a sense of individual and community responsibility for the correction of social ills (Olasky, 1995; Moyer et al., 2012).

A good number of faith-based social service programs have been categorized as such based on two basic dimensions of religiosity:

- *environmental elements*, including affiliation with a church or denomination; display of religious objects, images, and literature in the space where the program meets; selection of board members and/or staff based on their religious beliefs; and a mission statement that has explicitly religious references; and

- *active religious elements*, that is, those that involve the direct communication of a religious message to clients, or client involvement in specifically religious activities (Thaut, 2009).

Another typology of FBOs is conceptualized as a continuum of religiosity ranging from faith-saturated to secular organizations, with faith-centered, faith-related, faith-background, and faith-secular partnership as degrees between the two extremes. The characteristics of religiosity that are used to place an organization on the continuum are the following:

1. mission statement;
2. religious purpose in the founding;
3. religiousness of the controlling board, senior management, and staff;
4. affiliations with external religious agencies;
5. financial support from religious sources;
6. religious content of the program;
7. connection between religious content and outcomes; and
8. religious environment (e.g., name, building, religious symbols) (Ebaugh et al., 2003).

FBOs are also much more concentrated in their service offerings than their secular counterparts. They play an important role, however, through their emphasis on transitional assistance, their multi-service orientation, and their reliance on interventions that utilize their unique strengths. The unique organizational structure of FBOs may thus offer both efficiency and effectiveness advantages over secular service

providers and which have implications for long-term sustainability. First, FBOs may be more efficient at delivering some social services, with avenues for such an advantage including the role of churches and volunteers. Churches, being the most common institution in many local communities, have existing infrastructure and network relationships—buildings, human resources, community connections—that could be utilized for the delivery of social services. Christian congregations, for instance, are well positioned to address the multi-service needs of the poor because of their strong networks within the community. FBOs also have access to volunteers, whose role in the service provision of these organizations is substantial—such "low-cost" labor may enable FBOs to offer more services or allot more time to each beneficiary compared to other providers. Second, the defining characteristic of these organizations—their reliance on faith—may make them more effective by leading them to employ either different methods of service delivery or the same methods but with more intensity compared to secular service providers (Graddy & Ye, 2006).

Christianity has played a major role over the centuries in a special way. Its principles and missionary efforts, for instance, have been central in the development of humanitarianism. Agencies associated with the Christian tradition comprise a prominent and growing portion of international humanitarian organizations, and Christian views of love and care for one's neighbor are fundamental to a Western concept of humanitarianism, making Christian faith-based agencies major global players in the field (Thaut, 2009). These organizations typically see their work as a ministry or calling, causing them to behave differently than other service providers. Due to their sense of mission, they are more willing to make long-term commitments to service recipients and continue providing service until changes occur. As such, these FBOs are more likely to rely on mentoring and on one-on-one relationships in which a person is encouraged, challenged, and taught how to do things. They are more adaptive and willing to conform services to an individual's needs in contrast to a governmental program that insists on conformity for all. Such findings are consistent with the most oft-cited advantage of FBOs—their potential for a life-transforming effect on service recipients. The implication for long-term sustainability, therefore, is as follows: if congregations can foster individual transformations that lead to better problem-solving skills, increased self-respect, and healthier family dynamics, then these attributes will lead to greater self-sufficiency (Graddy & Ye, 2006).

After having discussed whether and why religiously affiliated organizations are perceived to be better than their secular counterparts at providing assistance services, we turn our attention to faith-based

TSOs themselves. In certain Western countries as of late, religiously affiliated organizations have focused more on smaller-scale solutions to pressing social problems of poverty, homelessness, addiction treatment, medical care, and human rights. As we have seen above, they are not necessarily bound by the same ideological and practical expectations for results, accountability, legal recognition, and networking as their secular counterparts are, taking their cues instead from denominational ethics and institutional practices. As a consequence, religiously affiliated assistance programs (often) fall outside, if not fitting uneasily within, prevailing institutional logics, thereby enabling them to carve out a productive niche for themselves. Staff and supporters of such smaller-scale entities contend that their value and effectiveness derive precisely from their ability to address the gaps—and even negative consequences—caused by conventional development projects (Caldwell, 2012).

Faith-based social enterprises such as those discussed here have a special role to play in alleviating poverty, creating empowerment, and establishing entitlement at the grassroots level of socioeconomic development. The endpoint for many of them is a participatory socioeconomic transformation in which the non-competing poor and underprivileged cooperate with each other, and where meaningful relations are created between the resourceful and those in need to enhance community well-being (Choudhury, Hossain, & Solaiman, 2008). Thus, rather than be some quick-fix solution, they require easily accessible, low cost, and amenable funds and technology that can be sustained in the long-term.

In addition to the social capital inherent in FBOs, the spirituality of the leader has also been discovered to have a critical impact on social enterprises. The importance of values and the role of the leader in their infusion within organizations cannot be ignored since the institutional leader is an expert primarily in the promotion and protection of values, defined as what the organization essentially stands for and that which must be promoted by its leaders to ensure institutional integrity (Teehankee, 2012).

The aim of *regeneration* for developing sustainable communities appears to have been achievable through FBOs as well. The values of TSOs in providing a voice for under-represented groups; campaigning for change; creating strong, active, and connected communities; and promoting enterprising solutions to social and environmental challenges have been recognized—to be more precise, the role of the third sector as a "driver" for building *sustainable communities* has been stressed: the third sector—and social enterprise in particular—can be an engine for regeneration. Indeed, a highlight here is the activity of the third sector

in delivering environmental improvements and meeting environmental challenges—it seems to have a clear role in increasing voluntary activity toward environmental improvement, often building a sense of community pride and ownership in the process. Faith-based TSOs are thus poised to deliver neighborhood *regeneration* and civil renewal which in turn are necessary for sustainable regeneration and the fostering of *sustainable communities*, especially since it has been argued that faith-based social service delivery provides more effective services compared to secular agencies (Ebaugh et al., 2003; Smith, 2010).

It has also been argued that religion can improve mental, physical, and spiritual health as well as resolve a number of social problems, and that FBOs, compared to government and secular service providers, can offer a more holistic approach to meeting individuals' needs by providing caring staff and supportive networks. Faith-based social service organizations generally allow both care providers and beneficiaries to develop a sense of individual and communal responsibility when approaching social concerns. Christian organizations, moreover, emphasize relationships arising from a business encounter in a special way because of the belief that they are responding to the most basic of Christian calls: to love one another and to be a gift to each other (Clerkin & Grønbjerg, 2007; Gallagher & Buckeye, 2014).

For Roman Catholic faith-in-action, one integrative finding involves the Roman Catholic perspective on human life, which has been shown to inform the entire organization. A Roman Catholic businessperson is obliged to struggle for business success while serving the community and trying to live as a good Roman Catholic in a world of temptations and contradicting realities. In addition to necessary skills in communication, numeracy, critical thinking, and problem solving, good Roman Catholics in FBOs abide by a "Catholic moral center" which has come to form part of their core competencies (Del Rosario, 2015). As shown in various case studies, the downtrodden are viewed as worthy of support due to their membership in the human family; their misfortunes, relative disadvantages, and previous wrongdoings become meaningless compared to the spiritual gifts of being created by God in the divine image and likeness and of having been bestowed with an immortal soul. Those who are less fortunate are invited to eat at God's table as part of the promise that the meek in spirit shall inherit the earth (Matt. 5:5).

Beyond these outcomes, however, the more important finding is the empowerment provided by *social capital*. In this context, the Roman Catholic faithful embrace the deeply-rooted concern for each other that exists within the impoverished collective, a concern that results in the sharing of meager resources to enhance mutual survival in times of

greatest need; such an ethic may have as its origin a form of reciprocity that mirrors the motivations of Roman Catholic clergy and volunteers who work for the poor. Indeed, it was discovered that lending, borrowing, and trading within impoverished consumer subpopulations was designed to smooth out peaks and valleys in the availability of perishable items or emergency requirements. Instead of allowing food to go to waste during periods of excess, for example, an individual may share what she or he has to engender a feeling of obligation that is essential for reciprocal relationships (Hill, 2006).

2.3 The National Religious Partnership for the Environment

The religious community's response to increasing concerns about the relationship between humans and nature has been vast and varied. In some cases, it has been simply to form bodies that will explore ways of raising environmental consciousness, such as when astronomer Carl Sagan; the Very Rev. James P. Morton, president of the Temple of Understanding; and Paul Gorman, vice president of public affairs for the Cathedral of the Divine in New York City, drafted an open letter to the religious community in 1990 in an effort that led to the 1992 formation of the National Religious Partnership for the Environment (NRPE). Representing a range of Christian and Jewish communities in the United States, the NRPE seeks to incorporate environmental concern into religious life on various levels. It is comprised of four major organizations that together serve more than 100 million Americans—the United States Conference of Catholic Bishops (USCCB), the National Council of Churches of Christ (NCCC), the Coalition on Environment and Jewish Life (COEJL), and the Evangelical Environmental Network (EEN)—and engages scholars in the task of exploring and publicizing the connections between religious traditions and the environment through conferences and publications (see http://fore.yale.edu/religion/christianity/projects/nrpe/). The COEJL, in particular, builds a strong case for the complementary roles of religion and science:

> "Stewardship is a way of seeing the world that comes out of our most ancient religious traditions and feeds directly into our most contemporary scientific understandings. There is in fact a powerful, even wondrous link between the mystical and the statistical.... Religion and science alike agree that there is a profound integrity to the natural order, a marvellous ecological complexity that even now, with all our growing understanding, is beyond our comprehension. The serious scientist is no less in awe of that integrity, of that complexity, of that order, than the most pious person of faith," says its study and action guide *To Till and to Tend*. (Baker, 1996)

The NRPE has been active in distributing "creation care resources" to congregations as well as lobbying in the public policy arena. Matthew Fox, an Episcopal priest and founder of the University of Creation Spirituality, has argued for an end to dualism in which human beings and nature are seen as separate. He posits instead a "creation-centered spirituality" which overturns the usual Christian emphasis on the fall and redemption. The Episcopal Cathedral Church of Saint John the Divine in New York City, which is also the home of the NRPE, has led the way in the greening of Christian liturgy; other Christian worship services have been altered as well to include a more explicit emphasis on nature. For instance, in addition to sponsoring the Gaia Institute (whose purpose is to explore and expand the Gaia hypothesis—that the Earth is a living, self-regulating entity), the Episcopal Cathedral Church now blesses animals on the Feast of Saint Francis (Hill, 2000).

Aside from the NRPE, the religious environmental movement spurred other significant institutional innovations such as the development of new faith-based environmental organizations. Many of these initiatives began in response to official environmental statements made by national religious assemblies, and alongside the corresponding emergence of national ministries. Indeed, the literature indicates that many denominations and FBOs have made significant inroads in promoting religious environmentalism at the individual and congregational level. Moreover, while many of the faith-based environmental initiatives were responding to official statements at the national level, other faith-based groups emerged to address local environmental concerns. Stewardship does truly serve as the conceptual common ground across these groups (Hand & Crowe, 2012).

3. FAITH-BASED SOCIAL ENTERPRISES: THE PHILIPPINE CASE

Large portions of East and Southeast Asia are in the throes of a historically unprecedented upsurge in religious observance and association, though many analysts have emphasized the influence of postcolonial secularisms, neoliberal disciplines, and ascendant civil societies in this religious resurgence. Scholars from many disciplines and approaches have pointed out a vast array of factors that may have affected the current interest in workplace spirituality and religion, including demographic and religious changes in society, overall improvements in certain nations' standard of living, and a variety of transformations in the workplace itself. The Philippines, where 85–90 percent of the population consider themselves Roman Catholic, is no exception: the country and its culture subscribe to the morality encapsulated in

the Decalogue, especially the Seventh and Tenth Commandments (concerning respect for property) as well as, to a lesser degree, the Eighth (referring to trustworthiness) (Hefner, 2010; Hicks, 2003; Sison & Palma-Angeles, 1997). Business practices in the Philippines are thus largely influenced by Christian faith.

Drawing from the wellsprings of the social doctrine of the Roman Catholic Church, Philippine business in general advocates a moral and spiritual vision of society which counts as its basic principles integral development, social justice, a preferential love for the poor, an attitude of respect and responsible stewardship over nature as material creation, and the non-espousal of any particular ideology, be it liberal capitalism or Marxist collectivism. Consequently, it admonishes all Church sectors, among other things, to work actively for the end of the manufacture and trade of arms; to address crucial issues such as agrarian and industrialization concerns, the exploitation of women, children, and migrant workers, foreign debt, international trade, etc.; and to undertake collections for the immediate relief and rehabilitation of the poor and the needy. There have always been problems, however, in the exercise of one's faith, as well as challenges in how it could influence one's own behavior and profession (even though majority of the population declares itself to be Roman Catholic). Nevertheless, a good number of Filipino Roman Catholics/Christians have given ground to the demand that religion resonate with the needs and desires of ordinary believers, especially the poor and marginalized (Sison & Palma-Angeles, 1997).

Just like in other developing or underdeveloped nations, and with poverty as a major social pressure point, government capacity to deliver social equity in the Philippines is stretched, and so business is called upon to take up the slack. Corporate philanthropy has turned out to be a way to augment the government's efforts in addressing pressing social problems such as destitution, joblessness, homelessness, and hunger. The solutions to such concerns in the Philippines are ultimately to be found in:

- countryside and rural infrastructure;
- quality basic education for the children of the poor and in Muslim areas, and especially for women;
- cash transfers to the poorest of the poor;
- primary health services;
- microcredit and microenterprise programs;
- technical skills training for secondary school students; and
- social housing such as that provided by Gawad Kalinga (Habaradas, 2013; Racelis, 2012).

As a predominantly Roman Catholic country, the Philippines also has a good number of Christian educational institutions—and Roman Catholic business schools in particular—that have produced businesspersons who continuously try to succeed in business while upholding Roman Catholic principles. Students in these institutions learn how to live a morally good life and make the right business decisions for the rest of their professional lives; they are ready to question the status quo, stand on principles, and transform Philippine communities. In their faith-based management courses, the commitment and vision is to produce managers and business leaders who have the passion and commitment to help millions of Filipinos out of poverty and into lives of dignity and well-being. From 2007 onwards, and with the United Nations' Principles for Responsible Management Education (UN-PRME) as guidelines, specific business schools were thus presented with the opportunity to deepen further their commitment to management education for social responsibility (Teehankee, 2012; Del Rosario, 2015).

The next subsections take up three case studies of socially-oriented enterprises created by prominent Roman Catholic or Christian businesspersons in the Philippines, namely the highly successful Gawad Kalinga (literally, "give care" or "sharing and caring"), Bangko Kabayan (literally, "national solidarity bank"), and Rags2Riches, Inc., a social enterprise that evolved out of the efforts of the Simbahang Lingkod ng Bayan (literally, "the Church at the service of the community"), a Jesuit social apostolate organization.

3.1 Gawad Kalinga

Roman Catholic entrepreneur and social worker Mr. Antonio "Tony" Meloto received the Magsaysay Award for Community Leadership in 2006 for his work as the founder and primary mover of his brainchild, Gawad Kalinga (GK), an organization that has brought together a massive army of volunteers who work in *bayanihan* [literally, "in solidarity"] to bring about change and restore the dignity of the poorest of the poor. Although it was not originally conceived to solve the urban housing problem, GK is now known largely because of its success in mobilizing donors, volunteers, and intended beneficiaries to build beautiful and colorful houses in thousands of communities all over the Philippines. GK is present in almost every province in the country and has affected 60,000 families across over 2,000 communities, with 16 Area Coordination Teams on the ground going to where help is needed the most (Gawad Kalinga, 2014; Habaradas, 2013).

Beyond building houses, GK has also initiated self-sustaining programs that have improved the lives of more than 200,000 families (and counting) throughout the country since the mid-1990s. This has prompted observers to ask about the formula for its continued success. In Gawad Kalinga, the most important innovation is a shift in the paradigm of what community development ought to be. Instead of looking at members of poor communities as passive actors (i.e., as mere recipients of donations or beneficiaries of support programs), GK considers them to be active participants in the development process. The organization has succeeded in creating an image that appeals to donors, volunteers, and other stakeholders—fashioned as a nation-building movement, GK seeks to build a nation "empowered by people with faith and patriotism," one that is made up of "caring and sharing communities, dedicated to [eradicating] poverty and [restoring] human dignity" (Habaradas & Aquino, 2010).

The GK way thus takes a holistic approach that is sensitive to cultural values and social structures. It loves the poor and honors the rich who care for them. It does not condone corruption but engages all politicians who want to follow their brand of honest development which is their antidote to corruption. It follows the old-fashioned Filipino philosophy called "bayanihan"or "cooperativism." GK aims to restore the dignity of men and women, and at its core are those thousands of volunteers—young men and women, students, captains of industry, retired business persons—who offer "sweat equity" to build homes literally for the poor. Being a hero for others and leaving no one behind are central to the GK paradigm and ethic of simply helping one's neighbors (Meloto, 2009; Brillantes & Fernandez, 2011).

GK is a faith-based initiative and has become an operative model of development that can complement research, training, and extension work. Their values formation is based on universal human values that focus on caring, sharing, and learning how to become a *brother's keeper.* The initiative, in fact, has gone beyond providing a roof for the homeless: research shows how GK is transforming people's lifestyles, giving hopes and aspirations that result in greater self-reliance (lower, if not eradicated, incidences of scavenging and mendicancy), disciplined habits (lower spending on vices such as alcohol and gambling and greater spending on food), and improved health (lower incidence of disease and less spending on medicines) among their residents. Moreover, GK has also provided a framework for active citizen engagement in the process of improving quality of life. Active citizen participation is central to addressing basic problems such as corruption and an alarming decline of trust in institutions, problems besetting nations today but most especially developing ones like the Philippines (Brillantes & Fernandez, 2011).

This case highlights the ability of timely and values-based actions of entrepreneurial leaders in socially legitimated positions as well as the enabling of social conditions to bring about faith-based management in business organizations. Faith is expressed in GK's understanding of the root cause of poverty as not simply the absence of money but as an absence of shared values, of a sense of community and higher purpose. The case likewise showcases the necessity for leadership to fulfil its role as protector and promoter of values. For GK, their "good governance" ideal revolves around transparency, accountability, participation, rule of law, equity and social justice, sustainability, and continuity. Indeed, given chronic poverty in the Philippines, the entrepreneurial leadership of individuals like Mr. Meloto can provide far-reaching benefits to this developing nation (Teehankee, 2012).

3.2 Bangko Kabayan: An Economy of Communion Bank

Faith-based organizations tend to attach great importance to maintaining and enacting their ethos or values. This could be expressed, for example, in the realm of contracts and resources—the ability to secure voluntary resources, particularly through faith communities, plays a key part in enabling organizations to retain some autonomy and continue pursuing their own values, thereby achieving sustainability (Buckingham, 2012). For enterprises created and led by faith-enabled leaders, therefore, the spiritual and economic dimensions of life are visibly and intrinsically bound together, such as in the case of the Economy of Communion model of Chiara Lubich, founder of the Focolare Movement, where economic facts are interpreted as substantive proof of God's intervention in human life.

The most recent development in the economic vision of the Focolare Movement (an ecclesial community present in the Roman Catholic Church since the 1940s), the Economy of Communion model emerged in Brazil in 1991 and aims to offer a global Christian response to the pressing problems of poverty and injustice by challenging the underlying ethos of business and finance. It involves business people animated by Focolare spirituality who set up a new kind of enterprise based on Christian ethics. Operating within the free market and abiding by the business regulations and standards therein, such enterprises put the Focolare vision into practice primarily by dividing profits into three parts: one part goes to the poor, another to re-investment, and a third to the formation of others in this spirit. These businesses also try to apply certain ethical guidelines which mirror the "seven aspects" of spiritual life that underpin Focolare spirituality. Having been likened to the rainbow, these seven aspects speak of love as follows:

1. love leads to communion;
2. love is not closed in on itself but spreads according to its nature;
3. love elevates the soul, which is union with God in prayer;
4. love heals;
5. love gathers people together in assembly;
6. love is the source of wisdom and enlightens us; and
7. love gathers many into one, and this is unity.

In the ten years or so after the emergence of the EoC model, 761 businesses from all economic sectors have become EoC enterprises: 246 in Italy, 232 in the rest of Europe (60 of which are in Eastern Europe), 176 in Latin America, 45 in North America, 36 in Asia (including Bangko Kabayan in the Philippines, which will be discussed below), 15 in Australia, 9 in Africa, and 2 in the Middle East. The majority are small and medium sized companies, but ten of them have over 100 employees each. 194 are engaged in production/manufacturing activities, 161 in commerce, and 327 in services (Gold, 2003).

The general ideas of the EoC model have been very positively received, including in the Philippines where Bangko Kabayan is flourishing as an EoC bank. Ms. Teresa "Tess" Ganzon met the Focolare Movement in 1968 and has been an active member since. In 1991, she and her husband Francis, who had a one-unit rural bank, decided to adhere to the EoC project and have since grown their enterprise to the present 18-branch institution, particularly serving the micro, small, and medium entrepreneurs (MSMEs) of Batangas and the other provinces of Southern Luzon in the Philippines. Indeed, this experience of Bangko Kabayan along the principles of EoC has been shared in various international fora, and Tess has served as a member of the International Commission on Economy of Communion since 2008 (Ganzon, 2013).

Just like other EoC enterprises around the world, Bangko Kabayan embraces the following mindset:

> I believe that there is a condition, mostly spiritual, that impedes us from feeling secure and self-sufficient without having to depend on anyone and anything. When we no longer feel fragile and in need of help, when a bank account and secure job give us (or promise us) self-sufficiency and independence from others, then we are no longer those poor that the Gospel calls "blessed." This dimension of poverty depends on and is linked to all the other beatitudes. Only he who is pure, meek, a builder of peace, [and] persecuted for justice, can first understand and then live life with the blessed poverty described in the Gospels. The entrepreneur, too, is called to live this kind of poverty, if he wants to be an EoC entrepreneur. This poverty is

> not only spiritual detachment but much more. There is detachment from his role, from power, and perhaps from certain comforts, even when all of his colleagues consider them normal. Then, there is concrete detachment from money, when, at the end of the year, he gives part of his profits to further the goals of the EoC. These donated profits, which are not put in the bank, make him more vulnerable (therefore, these choices are always delicate in a business—not finding oneself a burden for others is a form of love and of responsibility). These donated profits put him in conditions of greater dependence and vulnerability, especially in difficult moments and in crises. (Bruni, 2010)

3.3 Rags2Riches

Conceived in 2007, Rags2Riches, Inc. is a faith-based social enterprise that evolved out of the efforts of Simbahang Lingkod ng Bayan [literally, "the Church at the service of the community"], a Jesuit social apostolate organization. Those who conceptualized the project wanted from the very beginning to help the women of Payatas,[1] many of whom were mothers who stayed at home to take care of their children, earn more income and live more dignified lives.

Taking advantage of their time at home and the garbage pile surrounding them, some of these women began to weave cloth scraps into multi-colored doormats, rags, and rugs for use in Filipino homes. It was a trend that soon grew into an informal cottage industry of rug-weavers, its products made mainly from upcycled cloths and scraps discarded from factories. Coming to their aid, Rags2Riches helped the women improve the quality and style of the rugs, transforming the unattractive multicolored pieces into appealing monochromatic fabrics.

The market's response to the elegant and stylish rugs was remarkable: the first few bazaars of Rags2Riches were sold-out and garnered a lot of positive feedback. Moreover, the women now directly supply a few upmarket boutiques in Metro Manila instead of selling their products through middlemen, who would purchase each rug for one peso (approx. U.S. $0.02) and then turn around to rake in twenty-five times that amount. Each rug now sells for about PhP 50 after Rags2Riches cut out the middlemen and taught the women how to improve their design and produce high-quality rugs.

Near the end of 2007, the Rags2Riches team decided to add more value to the current product line by integrating a designer angle. Two of

[1]Located in the north of Metro Manila, Payatas is one of the biggest dumpsites in the Philippines and a residential area for hundreds of Filipino households.

the members got in touch with Rajo Laurel, a famous Filipino fashion designer, and the team shared the ideals of Rags2Riches with him over an informal dinner. On that very same night, he transformed ordinary rags into elegant fashion pieces; by the very next day, he provided prototypes, and in less than four months, Rags2Riches was able to grow the initial capital by almost 400 percent.

Such results inspired the team to turn the social business enterprise into a formal corporation. Thus, from 20 housemothers, it is now helping at least 400, and in 2009 won the Business in Development Global Competition award. And while expansion resulted in engagements with other nearby communities, Rags2Riches ensured throughout it all that its products were one hundred percent consistent with their values, and that all materials were upcycled and thus "eco-friendly" (e.g., organic materials that did not use harmful dyes or chemicals). The women of Payatas—and of other communities as well—have clearly become empowered and enriched (Arnaldo, 2008; Cantera, 2009; Pelejo, 2012).

This case highlights the good effects that can be achieved by the mere desire to serve people and communities based on faith and mission. Rags2Riches aimed to improve the livelihood outcomes of the poor. Apart from meeting the "triple bottomline"—people, planet, and profits, it sought to exert a positive influence on the market, on the communities it works with, and eventually on the world. Indeed, the company has since spun off other similar faith-based social enterprises, including on Culion, a small island in Palawan, Philippines. Xavier "Javy" Alpasa, S.J., who used to serve as president of Rags2Riches, Inc., is committed to helping and training the students of the Loyola College of Culion, one of the most financially challenged Jesuit schools in the country, so that they may benefit from social enterprise. Fr. Alpasa is determined to promote social entrepreneurship as a good solution for society's ills via the triple bottomline, viz. caring for people, planet, and profit through positive influence (Pelejo, 2012; Pastores, 2010).

For Rags2Riches, patent in their origins is that Jesuit passion and spirituality whose social apostolate moved them to come to the aid of these women so that they may earn more, take better care of their health and well-being, and lead lives worthy of their innate dignity. As Teehankee (2012) carefully notes, the importance of values and the role of the leader in their infusion stand out in a special way indeed in Roman Catholic educational institutions in the Philippines.

4. PHILIPPINE FAITH-BASED SOCIAL ENTERPRISES: A PROPOSED THEORETICAL FRAMEWORK

Fissures exist within the Philippine economy, especially in the gap between the rich and the poor—income distribution has remained practically unchanged since 1985, when the upper 50 percent of families enjoyed 82 percent of the income; their share became only slightly lower at 80 percent in 2009. The theme, therefore, of the medium-term development plan of the present Philippine government and World Bank country report is *inclusive growth*. This reflects both the glaring income disparities which have persisted among Filipinos and the remedial measures to calm down this social volcano. Vibrant local communities, which are generally able to surf over threats and have the unique advantage of combining economic imperatives with social benefits, thus continue to be a source of hope. The same can be said for values such as self-transcendence and conservation which have formed over many years the basis upon which Filipino leaders have exercised social responsibility. Well-managed corporations also manifest trust in God in their social initiatives, such as in the proper treatment of employees (including job security and profit sharing), transparency, and good governance. Indeed, the Christian faith of employers—translated into the practice of social justice and the firm belief that both employees and capital equally deserve a share in the fruits of the economic enterprise—has in some cases led firms to commit generously to profit-sharing over several decades (Loanzon, 2012; Manalastas, 2007; Chan, 2015).

Religion and FBOs, in fact, typify the challenges that TSOs face as the public seeks to understand accountability. FBOs, for instance, tend to be more preoccupied with promoting their sacred mission than with adhering to accountability templates associated with the commercial and public sector. Their work is motivated by religion and/or ethics, their accountability mechanism is based on internally shared values and critique (Goodin, 2003), and they tend to adopt an inward focus that is not always compatible with the outwardly focused values of civic society. The accounting and accountability literature thus shows that account-giving in religious settings very often tends to be motivated by factors that fall outside standard commercial and public frameworks for accountability (Hardy & Ballis, 2013).

Faith indeed leads certain business leaders to feel that it is their obligation to give the fruits of God's blessings back to His people, particularly since everything comes from Him and He continues to care and provide for all. In the case of EoC businesses, a radical claim at the heart of their enterprise is that people can grow spiritually and in union

with others through the most basic and common of business practices, although business cannot do this by itself. Unlike other value-based movements that emphasize corporate social responsibility, business ethics, corporate citizenship, or social entrepreneurship, EoC is a movement deeply rooted in a cultural soil with rejuvenating spiritual sources. These enterprises are created and run by those who believe that one can truly see and be "Christ among us" through daily work and the conduct of business.

The great adventure of EoC participants, therefore, is to create a community of businesses that expresses a spirituality of unity. In contrast to an economy dedicated to profit-seeking above all else, the economy to which these companies commit themselves is one that manages work and pursues profits as means of expressing solidarity with co-workers, customers, suppliers, the community, even competitors, and especially with the poor. Therefore, while they are interested in doing well and generating a profit through prudent choices and good fortune, the owners of these businesses have a vision of being good by offering goods that are truly good and services that truly serve (Manalastas, 2007; Gallagher & Buckeye, 2014).

In light, then, of the Church's divine mandate as an institution meant to address the needs of the "little ones," a realization is being made about the social mission of religious institutions and the role of churches in the economic rehabilitation of the poor. The Church in Africa, for example, has contributed to an enabling environment in which the plight of the poor can be addressed: it has played roles in building the nation, guiding character formation, and providing social services such as schools, clinics, hospitals, and agricultural extension services (Kwarteng & Acquaye, 2011). Untapped social capital that can be harnessed for rehabilitating the poor, which requires closer collaboration and linkages among religious institutions, the state, and other development practitioners, has been discovered as well in other studies. Being the "light of the world," the Church indeed typically provides an alternative vision for humanity.

The ethnographic study by Hill (2006), for instance, also discerned a special kind of social capital at work in selected Roman Catholic social initiatives. It is evident that the Roman Catholic faithful embrace that concern for the other that is found even among the poor, a trait that supports the collective during times of hardship. In the Philippines, for example, social capital is a means of bonding within vernacular communities, bridging socio-economic divides, and linking these communities and distinct groups with official institutions, civil society, and the market. It manifests basic principles of Roman Catholic social teaching: human dignity, solidarity, and subsidiarity. Thus, overwhelmed

by turbo-capitalism, countries like the Philippines need to cultivate social capital to survive and flourish (Loanzon, 2012).

Another clear role of faith for business leaders is the potential for their spirituality to bring a workforce or organization together, for a basic workplace spirituality can usually serve as the common ground for a new work community (Hicks, 2003). In fact, spirituality especially on the part of the founder/director has been shown to be of critical importance in the conduct and eventual successful outcome of a faith-based social business. There is growing evidence, moreover, that executives' personal spiritual tradition deeply informs and shapes their leadership through: 1) a sense of leadership as a calling, 2) the desire to integrate deeply held personal values with the leadership role, and 3) spirituality as a source of courage when facing daunting challenges (Delbecq, 1999). Mitroff and Denton (1999) found that individuals and organizations with a strong sense of spirituality are far less likely to compromise their basic beliefs and values, and their data even suggested that spirituality may serve as a possible antidote to leaders' unethical behavior. The study by Johnson (2008), which examined the role of spirituality in ethical decision-making, seems to show that leaders' faith and spirituality move them to look beyond short-term solutions and to consider money as something secondary. Such an outlook imbues most of their customers with a feeling of trust, and leads them to view the way these companies do business as so radically different such that they really enjoy working with these executives over the long term, which obviously has implications for sustainability.

Based on the data and descriptive analyses mentioned above, this study proposes a theoretical framework in Figure 1 below, followed by a brief description of each component.

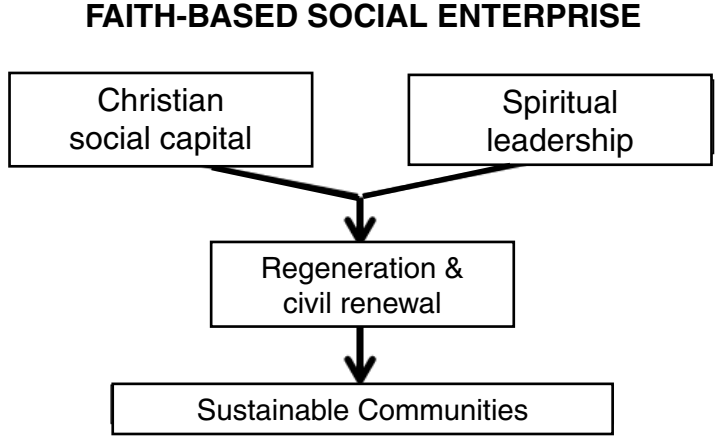

Figure 1: Faith-based Social Enterprise

4.1 Christian Social Capital

Literature and empirical studies reveal that high levels of social capital

- reduce poverty,
- increase health and well-being,
- limit crime rates,
- increase economic productivity,
- improve the quality of public life,
- intensify political participation, and
- increase the efficiency of institutions and administration.

Faith-based social capital is given a lot of special importance. Religious organizations, for instance, provide this valuable resource in considerable amounts—beyond the benefits accruing to the members of churches and religious organizations themselves, it has been shown that many religious organizations' activities also aim to serve the common good, thereby benefiting society as a whole (Traunmüller & Freitag, 2011). Faith-based social enterprises have also been successful in effecting sustainable and holistic change in the communities they serve, due in part to their ability to bridge socio-economic divides and an integrated approach to development and environment.

The following are characteristics of social capital as seen in the particular case studies above:

1. a participatory nature which involves the persons affected by the activity;

2. Christian proponents who embrace the deeply-rooted concern for one another which results in the sharing of meager resources to enhance mutual survival in times of greatest need (Church teachings on human dignity, solidarity, and subsidiarity have been particularly helpful in this regard); and

3. a Church that typically provides an alternative vision for humanity because it is an institution that is divinely mandated to be the "light of the world."

Indeed, the faith-based social enterprise's social capital is one that can be harnessed for rehabilitating the poor because it enables closer collaboration and linkages among religious institutions, the state, the market, civil society, and other development practitioners.

A culture like Gawad Kalinga's, for instance, is shot through with a Christian valuation of human life: it believes that restoring human dignity is integral to eradicating poverty. By taking the poorest of the poor out of a slum environment and providing for their basic needs (land, food, and homes for security), GK overcomes the sense of helplessness that poverty brings and helps transform their residents' lives by providing the sweat equity needed for building their new homes and community infrastructure. This in turn brings peace and cooperation to the community and helps build the *bayanihan* [literally, "community solidarity"] spirit among the residents. For EoC enterprises, on the other hand, giving profits for use outside of the business is an act of great poverty on behalf of the entrepreneur. It almost seems to go against nature, even, as entrepreneurs have the instinct to build their businesses. But this giving has great ethical and spiritual value, one that has led to the term "the culture of giving." It is a business model that is permeated with the Christian values of solidarity and care, principles highly encouraged among EoC practitioners and that have been referred to as "seeing things together," "humanizing" the economy, creating a "communion of goods," and trusting in Providence (Habaradas, 2013; Gold, 2003).

4.2 Spiritual Leadership

Values influence organizations given that leadership attitudes are influenced by discreet spiritual values and that spirituality is an important part of leadership practice. In most cases, faith leads business leaders to feel that it is their obligation to exercise greater care over human resources and a keener social responsibility. Theirs is a spirituality that has the power to bring about greater solidarity and unity in the work community. Such leadership spirituality also contributes significantly to advancing the sustainability project by facilitating engagement with deep questions about values and ethics, providing moral leadership and critical voices, influencing behavior, and introducing hope to demoralized efforts. In the Philippines, for example, meaningful social initiatives by businesses are driven by corporate values and leadership, and adopt a relational approach in dealing not only with community members or beneficiaries but also with various stakeholders (Habaradas, 2013; Moyer et al., 2012).

In the case of Gawad Kalinga, where the "Roadmap to End Poverty" begins with dignity restoration and moves on to community empowerment, access to mainstream opportunities and basic services, and eventually to character building and good citizenship, the strategic intervention is to provide *values formation*. The conduct of regular community values formation and leadership sessions helps transform the poor into organized and self-propelled collectives driven by universal

values of integrity, stewardship, servanthood, and solidarity (Gawad Kalinga, 2014). For Bangko Kabayan, the entrepreneur is a builder and an innovator by vocation, and the business leader betrays her social function if she becomes a seeker of income and position or a consumer of luxury goods. Such are the fruits of that original charism of the movement's founder and leader whose life experiences taught her profound perceptions of who people were in relation to God, to others, and to their place in the cosmos (Gold, 2003; Bruni, 2010; Caldwell, 2012). In both these cases, therefore, one sees that faith organizations present remarkably successful alternatives for enlisting and sustaining grassroots support in ways that create permanent communities of caring. This is borne out of Filipino leaders' unique values such as family closeness and solidarity, politeness, hospitality, gratitude, social acceptance, economic security, trust in God, and a firm conviction that a person's ultimate accountability is to his Creator, values that seem to be more closely associated with sustainability than those held by more secularly-led organizations (Manalastas, 2007).

In the case of Rags2Riches, the spiritual leadership of Fr. Alpasa moved him to continue providing the women of Payatas with earning opportunities through designer bags and fashion pieces made out of cloth scraps. He was motivated to create change where he was, and considered the beneficiaries of the social enterprise as "partners" on an equal level with the so-called "executives" of the firm. Since then, Fr. Alpasa has continued to promote social entrepreneurship as an alternative solution to social problems, and even created a new social enterprise after being assigned to another Church community.

5. CONCLUSIONS AND IMPLICATIONS

Through their ability to effect sustainable and holistic change due especially to their rootedness in the community and the social capital they help produce, faith-based organizations (FBOs) have long played a role in nation-building and international development. Moreover, those created and/or led by Christian leaders in particular are able to abide by and maintain their specific ethos or spiritual values, which has obvious impacts on contracts, workplace characteristics and behaviors, product or service offerings, resources and funding, relationships with clients, engagement with communities and citizens, etc., all of which in turn have certain implications for sustainability.

Gawad Kalinga has been taking the lead role in strengthening social capital: it has sought to build a nation empowered by people with faith and patriotism, one that is made up of caring and sharing communities and dedicated to eradicating poverty, restoring human dignity, and encouraging stewardship by teaching members to act out that Biblical recommendation to be one's *brother's keeper*. In the case of the Focolare Movement, where helping the poor is not viewed as an optional appendage to prayer but as an expression of spirituality in other dimensions of social and economic life, the aim since the beginning has been to offer a global Christian response to the pressing problems of poverty and injustice by challenging the underlying ethos of business and finance. Finally, the Christian spirit of the Jesuit social apostolate was what enabled Rags2Riches to help the women of Payatas earn for themselves and live out their lives with greater human dignity.

Roman Catholic management education institutions, whose leaders are driven by social responsibility and the achievement of the common good, understand that it is their role to produce managers and business leaders who have the passion and commitment to help millions of Filipinos out of poverty and into lives of dignity and well-being (Teehankee, 2012). Faith and spirituality find their expression indeed in business leadership and operations, thereby enabling FBOs to have peculiar characteristics that make them especially successful and sustainable.

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CAPITAL PLANNING, SELECTION, AND INVESTMENT

INTEGRATING SUSTAINABILITY IN DECISION-MAKING

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Abstract. Inspired by Pope Francis's call for a new journey that instills the importance of conservation and care for the environment, we propose a practical model that mathematically incorporates sustainability issues into capital planning, selection, and investment.

Evidence suggests that managers apply net present value (NPV) methodologies in a way that disadvantages environmentally sustainable investments. If an NPV model does not consider the costs and risks of non-sustainable projects, then the potential benefits of alternative sustainable investments will appear much less valuable than present costs. Sustainable investments also often require larger initial investments with long-term benefits and distant cash flow time horizons that are discounted at exponentially higher rates. Moreover, identified environmental costs and

benefits are generally limited to savings associated with energy costs, while hidden reductions in externalities are ignored. Thus, as commonly used, NPV models bias *against* sustainable alternatives in investment selection.

This article integrates accounting, finance, and engineering literatures to develop a model that incorporates sustainability and environmental impacts into capital selection through a life-cycle impact assessment (LCIA) appraisal. We operationalize LCIA so that hidden environmental costs and benefits can be identified, analyzed, and priced, thus resulting in a better prediction of cash flows. The model also integrates environmental risks into the cost of capital by developing a sustainability risk-adjusted discount rate and sustainability-cost NPV that effectively captures the sustainability exposures of capital projects, thus resulting in a risk-adjusted sustainable framework for decision-making.

Keywords: sustainability in capital budgeting; environmental life-cycle impact assessment (LCIA); life-cycle costing (LCC); life cycle analysis (LCA)

> Humanity is called to recognize the need for changes of lifestyle, production and consumption, in order to combat this warming or at least the human causes which produce or aggravate it. — Francis, *Laudato Si'* 23

1. INTRODUCTION

Choosing words from St. Francis of Assisi, Pope Francis's encyclical (Francis, 2015) on the environment begins with "Laudato si'," or "praise be to you." In this comprehensive document, the Pope describes in six chapters

1. the "state of the Earth" and what is happening to our common home;

2. the gospel of creation and how it requires humankind to provide proper stewardship to our planet;

3. the human roots of ecological crises: globalization's technocratic paradigm and the effects of modern anthropocentricism;

4. the recognition of interrelatedness among environmental, economic, social, and cultural ecologies;

5. the need for international political and religious dialogue with science; and

6. his recommendation for a new educational journey based on the Christian spirituality of simplicity that rejects extreme consumerism and creates a covenant between humanity and the environment.

Pope Francis's call for an educational journey toward a human covenant with the environment has been embraced by most universities. New curricula have attempted to integrate environmental awareness and conservation. Environmental Engineering and Environmental Studies have developed as stand-alone areas of specialization. Similarly, business schools are including sustainability in their mission statements. Unfortunately, however, topical areas in finance and accounting (Hopwood, 2009) have not developed practical frameworks by which sustainability can be taught (Werner & Stoner, 2015). To a large extent, textbooks in quantitative areas have not incorporated sustainability into theory or practice.

In this paper, we create a practical mathematical framework that integrates sustainability and environmental issues into a fundamental topic of corporate finance and managerial accounting: capital budgeting. Our goal is to convince academics and practitioners to consider changing their fundamental perspective concerning capital budgeting, and enable greater integration of available tools for incorporating sustainability into the investment selection process.

Capital budgeting concerns all the activities an organization undertakes to choose which long-term assets and investments best support the firm's operations, organizational goals, and strategy (Kim & Farraguer, 1981; Moore & Reichert, 1983). While capital budgeting encompasses the selection of investments in both intangible and tangible assets or projects, the focus of this paper primarily concerns a firm's investment in real, tangible, and long-term assets, e.g., machinery, plant, buildings, equipment, land, and other firms. Within the broader capital budgeting process, the decision of which long-term tangible assets to acquire has significant strategic and operational importance since these capital expenditures (CAPEX) usually represent a significant commitment of financial resources that remain invested over a long period of time. Decisions concerning fixed assets, such as the replacement of serviceable but obsolete equipment, or new CAPEX needed to increase output or achieve market expansion, require managers to complete detailed and significant analyses that have long-term impacts. Depending on the nature of the firm's business, the CAPEX resource allocation process

often constitutes the main vehicle for a company's strategic thrust, and thus eventually determines its long-run competitive position.

The amount of CAPEX investment is considerable and has been steadily increasing as machines and automation have replaced labor. Appendix 1 shows that, as of January 2015 in the United States, fixed assets[1] account for 19.5 percent of total assets and capital expenditures[2] among publicly listed companies.

As Pope Francis eloquently argues, there is a growing emphasis, social awareness, and an implicit expectation that firms—and the people who manage them—must behave in a more socially responsible and sustainable manner. Global warming, climate change, energy costs, and environmental degradation issues have heightened public scrutiny regarding the role of firms as agents partly responsible for these problems. As such, organizations are responding to and managing these pressures and risk exposures. Firms must increasingly identify all social, environmental, and economic impacts in order to assess, control, prevent, and eventually correct actions that might adversely affect human, animal, or plant life. Corporate commitment to sustainability is evidenced more and more by firms' participation in voluntary risk assessment and reporting initiatives such as the U.N.'s Global Compact (GC), the FTSE4 Good Indices, the Global Reporting Initiative (GRI), the Dow Jones Sustainability Indexes (DJSI), and through compliance with International Standards Organization certifications (ISO 14001 and ISO 26000).

However, evidence also suggests that the majority of firms fail to integrate sustainability in CAPEX decision-making models (Vesty, 2011). First, in applying these models, managers often view environmental costs and benefits through a lens of reducing energy costs, missing the myriad other threats and opportunities related to sustainable investing. Second, conventionally accepted Discounted Cash Flow (DCF)-based analytic methodologies, like Net Present Value (NPV) and the Internal Rate of Return (IRR), by construction do not favor sustainability-related investments (Hopwood, 2009; Kimbro, 2013). These commonly used capital budgeting models are built in ways that create bias *against* the selection of sustainable alternatives in capital project selection. For example, sustainable projects often require larger investments that

[1]Cumulative book value of fixed assets per sector as of January 2015.

[2]Cumulative capital spending per sector, as reported in the Statement of Cash Flows, not including acquisitions.

require longer time horizons to develop positive cash flows.[3] Because distant cash flows are discounted at exponentially increasing rates, such investments' promising long-term savings (cash inflows) appear small in present value terms. Also, the positive qualitative factors of sustainable alternatives might be hard to quantify, and the unobvious costs and risk-related externalities of less-sustainable alternatives can often be difficult to incorporate in the cost of capital and cash flow projections. Additionally, one might argue that discounting NPV techniques assume—incorrectly—that the benefit of future biodiversity preservation and "natural capital" conservation will decrease in future years. In other words, it will be wrong to assume that the *future* benefits of a sustainable investment will be *less valuable* than the present benefits of conservation as the application of discounting techniques imply. The Economics and Biodiversity Report of 2008 notes "that a 4 percent discount rate means that we value a natural service to our grandchildren (50 years hence) at one-seventh the utility we derive from it (today) … is a difficult standpoint to defend" (TEEB, 2008). Finally, there are many hidden costs that are buried in overhead and general expenses that are not captured in current capital budgeting analysis. Managers could select equipment without understanding and evaluating the Full Cost or Life-Cycle impacts that capital assets might have. For example, firms might acquire equipment that requires to be cleaned with a hazardous substance, or uses a refrigerant that affects the ozone layer, or is cooled with fluids which become contaminated during the production process, or is lubricated with hazardous lubricants that require workers to use protective equipment that must be removed and disposed of in a special manner. Without a clear understanding of all the hidden costs associated with the acquisition of capital assets, firms cannot effectively make optimal capital budgeting decisions.

This paper thus proposes a model to integrate sustainability issues into capital budgeting decisions. The model incorporates sustainability and environmental analysis into decision-making by evaluating eco-efficiency (EE) through life-cycle impact assessment (LCIA) and risk measurement, all of which serve to estimate more completely and accurately the costs and benefits of capital investments.

The discussion is organized as follows. Section 2 examines the process by which firms evolve toward incorporating sustainability in their decision-making. Section 3 discusses the process of capital budgeting and the decision-making methodologies used in appraisal analysis. Section 4 discusses the three stages of analysis that incorporate

[3]See International Federation of Accountants (2012).

sustainability considerations into cash flow measurement and estimation methods used in net present value (NPV) and discounted cash flow (DCF) techniques. In this section, life-cycle impact assessment (LCIA) is discussed as an alternative to life-cycle cost (LCC), life-cycle assessment (LCA), and whole-life costing. LCIA is operationalized as it relates to environmental screening, environmental impacts assessment, and eco-efficiency analysis. Section 5 discusses the cost of capital and how to incorporate the threats associated with environmentally hazardous capital projects by quantifying risk exposure and sustainability costs, and Section 6 concludes.

2. ORGANIZATIONAL COMMITMENT TO SUSTAINABILITY

A firm's environmental strategy and its commitment to sustainability typically develop and mature in three stages or mindsets that inform how managers integrate sustainability issues into their decision-making processes. The stages evolve from an initial focus on compliance with regulatory pressures, to cost avoidance and profit maximization, and finally to a comprehensive value-enhancing strategic approach.

At the compliance level, environmental and sustainability analysis is driven primarily by the need to meet government or industry regulations. In this stage, a firm's efforts are directed mainly toward calculating the minimum costs associated with existing compliance requirements, and no attention is given to future risk, prevention, or the potential for a change in regulatory environment.

In the cost avoidance and profit maximization phase, firms have typically gained experience from measuring compliance costs and have learned to appreciate the benefits of prevention, and so move into the mindset of "investing to save" through a cost-avoidance process that tries to anticipate environmental costs. That is, managers might seek to maximize profit by simply weighing the trade-off between the costs of potential non-compliance and the benefits of investing in assets that prevent these costs.

In contrast, managing sustainability using a strategic mindset requires firms to approach sustainability issues proactively by earnestly incorporating environmental costs and benefits as opportunities, enhancing managers' understanding of operations, processes, and systems. The strategic mindset also addresses the increasing demand for economic sustainability disclosure and governance sustainability performance information by regulators, investors, and firms (Kiron,

Kruschwitz, Haanaes, Reeves, & Goh, 2013).[4] The strategic mindset not only weighs the costs and benefits associated with sustainable investments, but also considers how these costs and benefits might change over time, and how the firm's stakeholders might assign their own values to these costs and benefits—values that markets might not fully or accurately measure today. Unlike the compliance and cost-avoidance mindsets—both of which deal with environmental costs as constraints—the strategic approach sees information regarding environmental costs as a strategic business opportunity to create value.

Rapid progression through the stages to a strategic mindset can be attributed to increasing awareness in general of the sometimes difficult-to-quantify benefits of sustainable business practices. The June 2015 publication of Pope Francis's (and advisors') encyclical, *Laudato Si'*, further raised the profile of social and environmental responsibility in business, and calls for moral leadership in business practices. The encyclical underlines and amplifies a continuing trend of heightened social awareness and integration of moral leadership in business education (Garanzini, 2015), including a call by Werner and Stoner (2015) to educators specifically in finance—often considered "part of the problem" concerning unsustainable practices—to transform their teaching to address these issues and move toward a more just system.

Firms have become increasingly sensitive to environmental and sustainability issues for many reasons: they might be led by managers that, educated in the principles described above, prioritize these issues; they need to comply with current or future government or industry regulations and standards; they need to identify costs through product and process improvements that reduce inputs and waste; they might need to manage their image; or they might want to anticipate future regulations. Undoubtedly, firms need to measure and manage legal and regulatory costs as well as societal costs associated with public expectations regarding the need to preserve the environment and use natural resources carefully. Moreover, firms need to recognize that operating in a sustainable manner generates environmental benefits, savings, revenues, and ultimately value which might or might not be measurable. Regardless of the level of commitment to sustainability issues—compliance, cost avoidance, or strategic—managers can benefit from understanding how to integrate sustainability into the important task of deciding which capital expenditures maximize shareholders' and stakeholders' value while respecting the earth and the environment.

[4]In fact, there is evidence that disclosures concerning environmental, social, and governance dimensions of sustainability performance work to reduce firms' costs of equity capital (Ng & Rezaee, 2015), and thus enhance shareholder value.

3. CAPITAL BUDGETING IN PRACTICE

Capital budgeting is also called capital allocation decision-making, asset appraisal analysis, capital investment appraisal, and capital planning. Capital budgeting is the process by which an organization determines which long-term assets and investments—such as machinery, plant, building facilities, equipment, land, research and development—are worth acquiring to support the firm's operations and organizational goals (Kim & Farraguer, 1981). The process of acquiring long-term assets has significant strategic and operational importance since capital expenditures usually represent a significant commitment of financial resources which remain invested over a long period of time. Decisions related to the replacement of serviceable but obsolete equipment to achieve cost reductions, or capital expenditures necessary to increase product output or achieve market expansion, all involve detailed and significant analysis. Firms commit cash to a capital project or investment because they expect to generate even more cash in the future. The value of a capital project is based on how much cash a project might generate in the future in terms of dollars today; the higher the NPV or return, the greater the value of the project.

Because capital investments are typically long-lived, the accepted practices for making capital budgeting decisions involve longer-horizon techniques that consider the time value of money through discounted cash flows (DCF), e.g., the NPV and related Internal Rate of Return (IRR) decision metrics (Brotherson, Eades, Harris, & Higgins, 2013; Graham & Harvey, 2001; Kim & Farraguer, 1981; Pike, 1988). Shorter-horizon techniques such as the payback criterion fell out of favor long ago, primarily because such techniques lack an effective means to adjust for the risk of a potential investment, and they ignore the time value of money—as a result, the payback decision metric can result in suboptimal investment decisions. Similarly, managers who ignore the long-term risks inherent in environmentally sensitive assets will tend to commit errors, just as those who once employed the payback rule. Although payback and accounting rate of return are sometimes still used as secondary methods, discounted cash flow (DCF) methods are the primary and preferred methods in contemporary capital budgeting analysis (Brotherson et al., 2013; Graham & Harvey, 2001).

Firms with short-term horizons, as a general rule, end up making suboptimal allocation decisions. "Buying the cheapest" is no longer the acceptable approach used in modern capital budgeting. Most managers realize that the least expensive investment opportunity is rarely the best alternative in the long run. In line with this realization, preferred capital budgeting methods have evolved significantly during

the last twenty years. Before the 1980s, firms rarely used DCF and NPV methods; however, by 1999, 75% of surveyed firms used DCF and NPV to evaluate capital budgeting decisions (Graham & Harvey, 2001; Moore & Reichert, 1983), and in a recent survey, Brotherson et al. (2013) show that 95% of highly regarded "Best Practices" practitioners use a DCF methodology as the primary decision criterion. This paper thus aims to inspire continued evolution of the best practices in capital budgeting by providing managers with tools for more completely including all the risk factors—including environmental ones—associated with an investment opportunity.

Since virtually all capital budgeting decisions are analyzed with the use of computer software, it is relatively easy to calculate NPV or IRR, and the chief difficulties concern estimating cash flows, residual value, risk and the cost of capital, and the intangible benefits (or costs) of acquiring the asset. Hence the real difficulty of deciding the merits of an investment is not the determination of which decision metric to use but, rather, it is determining the inputs necessary for these calculations. Specifically, to calculate the inputs of any NPV methodology, firms need to determine:

1. all cash inflows (cash savings, additional sales, salvage inflows, etc.) and cash outflows (initial cost of the asset, energy costs, maintenance, repairs, depreciation, disposal costs, etc.) each project will generate each year;
2. how to quantify the non-cash benefits: either through reducing the discount rate or transforming these through cash flows;
3. how many years the capital asset will last from "cradle to grave";
4. how to incorporate the uncertainty and risk of these cash flow predictions into the cost of capital for *each* project, taking into account its individual risk; and
5. the cost-of-capital or risk measure that will be used to discount the predicted cash flows for each alternative.

In sum, to calculate NPV for each capital asset alternative, managers need to:

1. determine the cash outflow of the initial investment (CF_0);
2. estimate the cash inflows and outflows (cash flows at time i, or CF_i) for each year over the life of the asset;

3. estimate the risk, reflected in the cost of capital (*r*) for each asset; and

4. specify the number of years (*i*) expected as the true life of the asset, i.e., "from cradle to grave."

NPV = Present Value (PV) of all future cash flows (CF_i) discounted at the cost of capital (r) - Initial cost of the project (CF_0)

NPV essentially summarizes, in one number, the total dollar benefits and costs of an investment, all converted into today's dollars, i.e., present value (Buser, 1986). The discount rate, also known as the cost of capital, determines at what rate of exchange the future cash flows are converted into today's dollars. In present value terms, when a potential capital investment's benefits exceed its costs, the project will increase value for stakeholders, and thus should be undertaken. Conversely, a negative NPV indicates that undertaking the investment will destroy value for the firm's stakeholders.

4. INCORPORATING SUSTAINABILITY INTO NPV AND DCF: PREDICTING CASH FLOWS

Firms must evaluate all future cash flows that each investment will generate. Cash flows for the life of *each* project—from cradle to grave—must be estimated. To predict these future cash flows, the impact of all areas affected by the proposed capital expenditure must be evaluated, as well as the riskiness of the expected cash flows, which will later be used to estimate the cost of capital.

4.1 Identify, Evaluate, and Measure General Costs and Benefits

A basic screening of the traditional capital budgeting items to be included in the cash flow calculation is the first step in quantifying cash inflows and outflows. Appendix 2 provides a starting point for this.

We argue that to incorporate sustainability fully into the estimation of cash flows, life-cycle impact assessment (LCIA) must be used. LCIA goes beyond life-cycle cost analysis (LCC) and life-cycle assessment (LCA), both of which do not typically incorporate environment-related costs and benefits.[5] Although LCC takes into account user costs as well

[5]The terminology and definitions are sometimes ambiguous. In some instances, LCC and LCIA measure and incorporate the same measurements and thus are exactly the same.

as agency costs related to activities like maintenance and repairs, it often ignores indirect environmental costs.[6] LCIA includes LCC *as well as* environmental impacts related to all stages in the life of an asset—from cradle-to-grave. LCIA provides the optimal structure for firms to understand better the financial and environmental effects—both costs and benefits—of capital assets, products, services, and activities, and thus results in a more comprehensive model that predicts future cash flow impacts. Specifically, LCIA requires generating an inventory of activities that could impact cash outflows (costs) and cash inflows (benefits). Appendix 2[7] provides a checklist or inventory list of activities that result in cash inflows and outflows, thus facilitating the consideration of environmental-related costs. For a complete assessment of a project's merits, managers must estimate items such as insurance fees to cover handling of hazardous substances, waste disposal costs, landfill costs and taxes, remediation/clean-up costs, shut-down costs, the probability of fines and prosecutions, and asset disposal costs, to name a few. A thorough assessment of each project must include all potential environmental costs and benefits, and the checklist in Appendix 2 provides a blueprint for managers to quantify risks and opportunities associated with each investment.

4.2 Estimating Cash Flows Using Life-Cycle Impact Assessment (LCIA)

Many environmental costs are hidden in overhead and general administrative expense accounts, and their impact is not properly priced into the assets and activities that created them. Relevant costs and benefits are essential components of capital investment[8] analysis that unfortunately are too often ignored. LCIA helps to identify these costs clearly.

Eco-efficiency requires an integrated assessment of the environmental and economic aspects of assets and services from a life-cycle perspective. The concept of life-cycle includes *everything*. In other words, LCIA goes beyond the typical "useful-life" methodology frequently used in accounting. Unlike economic analysis, in LCIA all the impacts of a capital asset are summed up along the whole life-cycle to give a complete understanding of the entire impact of owning a capital asset. The costs of buying, financing, installing, maintaining, operating, repairing, replacing, and disposing of an asset are considered outflows of cash. All energy savings, rebates, tax-savings, depreciation, and productivity

[6]See Nishijima and Faber (2009).

[7]Appendix 2 incorporates the recommendations in Epstein and Buhovac (2005), De Beer (2006), Corotis (2009), and Hastings (2015).

[8]See Balachandran, Balakrishan, and Sivaramakrishnan (1997).

improvements are considered inflows of cash. These cash inflows and outflows are projected over the life of the asset, adjusted for inflation and anticipated uncertainty, to determine the NPV of each capital project. LCIA involves a comprehensive evaluation of all the direct and indirect environmental impacts of a capital asset throughout its life and beyond its "useful" stage. Thus, managers who duly identify and analyze the full scope of a capital asset's environmental consequences will be better equipped to make optimal investments that price *a priori* pollution prevention rather than remediation and "end of the pipe" solutions.

4.3 Use of LCIA for Initial Environmental Screening

In this stage, an initial environmental screening covering all potential indirect and direct items that have a high probability of generating an environmental impact is performed. Whether the capital budgeting decision involves a single project or a selection among different asset alternatives, all possible impacts must be measured and assessed *before* going through any financial analysis. Appendix 3 offers an example of an initial environmental screening checklist that could apply for the purchase of a machine or equipment. Of course, each organization and asset class will have particular issues that should be tailored accordingly.

The information from the Initial Inventory checklist in Appendix 2 and the Environmental Screening in Appendix 3 provide raw data and information that managers can use as the starting point for more refined quantification of sustainability and environmental costs. In particular, Appendix 3 could help evaluate the life-cycle impacts of capital assets so that appropriate impact assessments are generated and quantified. Appendix 3 also includes a column that evaluates the level of toxicity of operational externalities. In building Appendix 3, we have used the Environmental Protection Agency (EPA) Toxic Substance Inventory as a reference; however, there are many other sources from which managers can assess the level of toxicity, and we recommend using appropriate standards of risk mitigation that should go beyond minimal safety regulations (for examples, see the US National Institutes of Health [NIH] *Hazardous Substance Databank* and the US Environmental Protection Agency [EPA] *Toxic Substance Inventory Report* [EOTOX]).

4.4 Evaluate Eco-efficiency and Quantify Impacts

If the environmental screening reveals that the asset does create waste or externality, then this item must be evaluated and its impact must be categorized using an impact category similar to the one presented in Appendix 3. Many of these costs are "external" costs that are generally

not considered in capital budgeting decisions, yet these "externalities" have an impact on human health or eco-systems through the release of toxic substances. Unfortunately, it is neither the firm nor the consumer that bears these costs, but society as a whole and—eventually—future generations. Such impacts are obviously more difficult to quantify, and it is up to the firm to assess the weight it will give them in the capital budgeting analysis. On the other hand, it would seem justifiable and responsible to integrate these costs in the decision-making if managers can reasonably foresee legislation that internalizes external costs for certain wastes, emissions, materials, or externalities. This could be the case for CO_2 taxes on fossil fuels or carbon emission taxation. For a more detailed analysis, various assessments have been developed that help quantify toxicity potential (Bunke & Graulish, 2002; Bunke, Gensch, Möller, Rüdenauer, Ebinger, & Graulich, 2003).

In terms of capital investments in buildings, several green ratings systems have developed metrics that define and measure both current and future building performance. "Green metric" systems for buildings that can be employed and integrated into the capital budgeting process are: Leadership in Energy and Environmental Design for Existing Buildings: Operations and Maintenance (LEED-EB: O&M), Green Globes for Continual Improvement of Existing Buildings (GG-CIEB), the Green Guide for Health Care (GGHC), and the BRE Environmental Assessment Method (BREEAM).

5. INCORPORATING SUSTAINABILITY INTO THE COST OF CAPITAL AND FINAL INVESTMENT DECISION

The value of a capital investment depends on the expected cash flows discounted at a rate that reflects the riskiness of each cash flow. If this value is greater than the original investment cost, then the project has a positive NPV; if it is less, it has a negative NPV. Positive NPV projects create value while negative NPV projects destroy it.

The discount rate or the cost of capital is a function of the project's perceived riskiness, with risky projects requiring higher returns compared to less risky ones. For example, a firm will use a much lower discount rate in its decision whether or not to replace aging equipment (more certain expected cash flows, lower risk) as compared to a decision regarding a risky new product launch. Risk can be defined as the probability of exposure to any event or action that will adversely affect an organization's ability to create value. There is some evidence that firms evaluate risky investments by estimating expected values, standard

deviations, and semi-variances of net cash flows for each alternative investment, as well as multiple-criteria capital budgeting models under risk by using higher discount rates that incorporate higher risk factors (Kwak, Shi, Lee, & Lee, 1996; Lin, 1993; Pike, 1983).

The importance of integrating risks into management decisions and in particular into capital allocation decisions cannot be underestimated. These risks might be strategic, operational, reporting, or compliance risks (Epstein & Buhovac, 2005). Sustainability issues are a component of each of these risk categories. Strategic risks relate to the firm's choice of strategies and include industry, transaction, technological, political, and organizational risks. Operational risks relate to threats from ineffective business processes. Reporting risks relate to the reliability, accuracy, and timeliness of information systems, both internal and external. Compliance risks relate to the inability of the firm to comply with applicable laws and regulations.

There are two main approaches toward integrating sustainability issues into capital budgeting decisions: the differential risks for sustainable costs and benefits can be incorporated into a "Sustainability Risk-Adjusted Discount Rate," or the manager can quantify the "Sustainability Cost NPV" that captures risk by assessing the sustainability exposure and potential costs inherent in each project.

5.1 The Sustainability Risk-Adjusted Discount Rate

To develop the "Sustainability Risk-Adjusted Discount Rate," managers need to evaluate each capital project using an environmental risk inventory and through an eco-efficiency assessment (Appendices 3 and 4). If the inventory and assessment suggest that a prospective project presents higher environmental risk, that project should bear a higher discount rate (and vice-versa). Using these tools, managers can determine an incremental discount rate that will be added to the cost of capital of the environmentally risky project, thereby "penalizing" the project with a higher discount rate and a lower NPV. Conversely, investments that reduce the probability of pollution and/or non-compliance with regulations, or decrease the risk of other environmental hazards, will be evaluated at a lower risk-adjusted cost of capital and therefore generate a higher NPV. The first principle of discount rates is that they should reflect the risks of the cash flows to be discounted. Managers should appropriately assign higher rates to expected cash flows that bear more uncertainty, and vice-versa.

In general, managers can think of sustainability risk as the uncertainty of sustaining growth because certain practices may carry negative externalities that result in the deterioration of the firm's reputation or its value chain, or that adversely impact other related systems. A changing legal landscape might also make an otherwise acceptable investment less attractive if it increases the firm's risk of entanglement in costly disposal, cleanup, or litigation. The reality of sustainability or environmental risks calls for adding a risk premium—distinct from the firm's business and financial risks—to a firm's cost of capital. Firms that use a high degree of financial or operational leverage are particularly vulnerable to environmental risk factors—if environmental litigation occurs or penalties are assessed, such firms face a greater probability of financial distress or even bankruptcy. As the decision-maker uses the Environmental Screening tool in Appendix 3 to sharpen her assessment of the project's NPV, she should also strive to ascertain the real risk of these costs ballooning in a regulatory environment that potentially becomes more hostile over time.

Governments are increasingly instituting regulations in response to environmental degradation world-wide. In anticipation of such regulations, forward-looking companies should regard the following investments as reducing risk, and adjust discount rates appropriately: improved plant efficiency; the use of alternative fuels; upgraded, more efficient, or safer technologies; and expansion of portfolios to renewable energies; among other things. The realities of an uncertain and shifting environmental and regulatory landscape support the use of higher discount rates for projects that increase the chance of untoward environmental costs (thus presenting higher sustainability risk), and lower discount rates for more sustainable investment projects that reduce future risk of environmentally-related costs (and therefore present lower sustainability risk).

Consider the following brief example: a firm must choose between two assemblies of manufacturing equipment. The first (A) costs $50 million today and saves the firm $10 million per year for ten years. This assembly uses a modest amount of hazardous material, emits particles into the air, and might require special disposal at the end of its useful life, depending on the regulations ten years hence. However, assembly A meets *current* environmental regulations. The second assembly (B) also costs $50 million and saves the firm only $9 million per year over ten years. However, assembly B is much cleaner and has none of the emissions or disposal risks of equipment A. If the firm's managers blindly apply a 10% discount rate—irrespective of sustainability risk—to both assemblies, the NPV for A is $11.45 million

and the NPV for B is $5.30 million. The managers would (erroneously) accept equipment assembly A, concluding that it would add nearly twice as much value as B. However, a complete analysis should include a sustainability risk adjustment for the differential risks of the two assemblies, particularly for the high uncertainty concerning the ability of A to meet future regulations, and its potentially high disposal costs. If the managers account for sustainability risk, they might apply an adjusted 14% discount rate to assembly A and a 9% rate to assembly B. The final decision would favor assembly B's $7.76 million NPV over A's appropriately risk-adjusted $2.16 million NPV.

In fact, some researchers argue that future environmental benefits should not be discounted at all. With roots as far back as Ramsey (1928), some economists argue for not discounting the future cash flows of public projects, saying that for government to do so was "ethically indefensible." The logic of this view derives from the assertion that future generations do not participate in today's financial market negotiations, and therefore their interests are underrepresented in balancing future benefits against present costs. Managers might do well to consider the welfare of future generations when balancing the costs and benefits of sustainable development; discounting environmental benefits at a lower rate is one step in this direction.

5.2 The Sustainability Cost NPV

Another way of quantifying risks is to calculate a Sustainability Cost NPV by quantifying sustainability-negative impacts and subtracting this amount from each project's NPV calculation. This involves identifying, classifying, and quantifying risks by multiplying each probability with each measurable impact for each capital project and then discounting these risk exposures to arrive at a negative present value or sustainability cost measure that will be subtracted from the positive NPV of each project.

Risk Exposure = (Probability of failure) x (Cost of failure)

Calculating the Sustainability Cost NPV:

1. Calculate the potential costs associated with each risk category.
2. Estimate the probability that each risk could materialize.
3. Multiply the potential cost(s) of each risk by its expected probability to calculate the expected value of each risk.

4. Estimate when the risk may develop. In the case of machines, the probabilities might increase as the asset gets older.
5. Calculate the NPV of each risk.
6. Aggregate and add the NPVs of all sustainability risks.
7. Subtract the Sustainability Cost NPV from the NPV calculation for each capital alternative.

6. CONCLUSION

There is evidence that most managers do not consider indirect environmental costs, savings, and externalities in capital budgeting decision-making and analysis. This could be because historically, most universities and textbooks have not adequately incorporated sustainability into quantitative topics like capital budgeting. There are also concerns that conventionally accepted analytic DCF methodologies like NPV and IRR do not favor sustainability-related investments and could even create bias *against* sustainable alternatives in capital selection. Furthermore, there are many hidden costs buried in overhead and in general expenses that are not captured in current capital budgeting analyses.

In today's highly connected and well-informed markets, managers realize that acknowledging and managing sustainability-related risks is no longer an option but a necessity for firm survival. Firm value encompasses all the activities of a company. Some of these activities have wider impacts on society and the environment than others, but they all have the potential for creating sustainable growth and development so long as management fully identifies and properly values the environmental costs, benefits, and risks associated with a firm's investments.

This article highlights the importance of identifying, measuring, and evaluating all the costs and savings of alternative capital investments, and provides models for managers to include sustainability risk factors in their decision-making. Using Life-Cycle Impact Assessment (LCIA), we identify sustainability-related costs from "cradle to grave" to provide a template by which hidden environmental costs and benefits may be identified, analyzed, and priced. In addition, we develop a framework for managers to justify applying a sustainability risk-adjusted discount rate, thereby appropriately adjusting for the increased risk that less-sustainable investments present to the firm, as well as for the risk reduction offered by more sustainably-oriented investments.

Effective action toward sustainability risk mitigation requires that managers appropriately execute risk assessment exercises like those proposed in this paper. These exercises should be approached as methodically as possible. Business decisions depend critically on future estimates, and robustly designed risk assessment tools offered in this paper will help managers make predictions with greater precision. Risk assessment will naturally differ from one firm to the next; however, there are a few commonalities. Risk assessment should quantify the risks so managers can anticipate the full picture of possible damages that may arise from unsustainable practices and the looming risks of regulatory change. An appreciation for the degree of impact in different scenarios is also vital.

A firm faces risks within its operating environment, and managers must consider the risks posed by water wars, climate change, social unrest, and other direct and indirect consequences of environmental damage. For example, a drought is not just an environmental issue but also a fundamental business risk involving processes such as raw materials procurement or sales efforts in impacted markets. Environmental degradation might cause governments to regulate more aggressively, making once-acceptable levels of effluent suddenly unlawful and costly. While sustainability initiatives might cynically be associated with "feel-good" marketing, viewing decisions through the lens of risk management changes the potential value proposition for skeptical business leaders. Managers should build for resilience in uncertain terrain. By using risk-assessment tools in NPV analysis that skew managers toward projects that reduce environmental risks, savvy companies may capitalize on opportunities to get ahead of institutional investors, regulators, and shareholders demanding more accountability and care for our common home.

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APPENDICES

APPENDIX 1: Fixed Assets and CAPEX Spending in the United States as of January 2015

Industry*	No. of firms	Fixed Assets / Total Assets	CAPEX / Total Assets
Consumer Nondurables[1]	194	21.15%	3.13%
Consumer Durables[2]	184	18.71%	3.34%
Manufacturing[3]	159	32.77%	3.00%
Energy[4]	688	104.61%	14.66%
Chemicals[5]	159	50.00%	5.09%
Business Equipment[6]	1132	19.97%	3.56%
Telecom[7]	242	45.00%	4.49%
Utilities[8]	40	98.86%	6.98%
Shops[9]	343	22.02%	5.71%
Healthcare[10]	1133	16.77%	1.90%
Bank & Financials[11]	977	0.37%	0.27%
Other[12]	620	36.97%	5.11%

* Fama & French industry classification

[1]Food, Tobacco, Textiles, Apparel, Leather, Toys

[2]Cars, TVs, Furniture, Household Appliances

[3]Machinery, Trucks, Planes, Off Furn, Paper, Com Printing

[4]Oil, Gas, and Coal Extraction and Products

[5]Chemicals and Allied Products

[6]Computers, Software, and Electronic Equipment

[7]Telephone and Television Transmission

[8]Utilities

[9]Wholesale, Retail, and Some Services (Laundries, Repair Shops)

[10]Healthcare, Medical Equipment, and Drugs;

[11]Finance

[12]Mines, Const, Bld Mat, Trans, Hotels, Bus Serv, Entertainment

APPENDIX 2: Inventory of Costs and Benefits

Cash outflows		Cash inflows	
Initial, operating, remediation, externalities, and other costs	Y/N?*	Operating, remediation, externalities, and disposal benefits	Y/N?*
purchase price		increase production	
sales taxes		increase in revenues & sales	
transportation costs		tax rebates	
interest/financing costs		tax savings	
installation costs		energy savings rebates	
license and permit costs		water conservation savings and rebates	
calibration costs		revenues from recycled externalities	
water costs		increase in useful life	
emissions and externalities costs		salvage value of capital asset	
costs of monitoring emissions			
plant or land space costs			
maintenance costs (labor and supplies)			
training costs (material handling and disposal)			
repair costs			
material inputs (ink, detergents, fuel, oil, etc.)			
insurance costs			
insurance fees to cover handling of hazardous substances			
hazardous materials & substances disposal			
supplies and maintenance waste disposal			
landfill costs and taxes related to material disposal			
remediation/clean up costs			
shut-down costs			
fines and prosecutions			
legal costs			
capital asset disposal costs			

*If yes, explain and quantify.

APPENDIX 3: Environmental Screening

Environmental Inventory	Y/N?	If yes, please explain which material or chemical	Remediation or disposal costs	Toxicity potential 1-5* 1=Low; 5=High
1. Require hazardous raw materials?				
2. Require hazardous lubricants?				
3. Require hazardous cleaning agents?				
4. Create waste water?				
5. Emit particles into the air?				
6. Generate heat or noise?				
7. Do employees need special protection equipment or clothing in order to operate around asset?				
8. Require plant modification to offset environmental impact?				
9. Have non-recyclable parts?				
10. Do parts need special disposal?				
11. Require reporting to regulatory agency (e.g., EPA)?				
12. Require inspections from regulatory agencies?				
13. Do parts and maintenance equipment require special storage facilities?				
14. Do parts and maintenance equipment require special transportation?				
15. Does the equipment require special disposal?				

* For detailed level of toxicity please refer to:

1. The National Institutes of Health (NIH) Hazardous Substances Databank (HSDB) and Toxicology Database (TOXNET) at http://toxnet.nlm.nih.gov, and/or

2. US Environmental Protection Agency (EPA) Toxic Substances Control Act (TSCA) for Aquatic Life, Terrestrial Plants and Wildlife (U.S. EPA, EOTOX, version 4, 2016).

APPENDIX 4: Impact Assessment and Eco-Efficiency Analysis

Impact Assessment	Item	Measurement Unit	Source
Waste	W	kg of waste equivalent	All
Toxic waste	TW	kg of toxic waste equivalent	Manufacturing
Air pollution	AP	kg of sulfur oxides (SO_2) equivalents	Manufacturing, combustion, power plants
		kg of nitrogen oxides (NO_2) equivalents	Manufacturing, transport
		kg of carbon monoxide (CO) equivalents	Manufacturing
		kg of particulates	Manufacturing
		Kg of mercury (Hg) equivalents	Manufacturing, power plants
		kg of Volatile Organic Compounds (VOCs)	Manufacturing, solvents, transportation
Indoor air quality	IAQ	kg of radon (Rn) equivalents	Land sites, mineral extraction
		kg of formaldehyde (H_2CO) equivalents	Manufacturing, maintenance and cleaning
		kg of asbestos	Plant insulation
		kg of Volatile Organic Compounds (VOCs)	Manufacturing, solvents
Inspection costs	IC	# of inspections per year	Plant and equipment
Global warming potential	GWP	kg of carbon dioxide (CO_2) equivalents	Manufacturing, transportation
		kg of methane (CH_4)	Manure, agriculture, solid waste, landfills
Water acidification potential	AP	kg of sulfur dioxide (SO_2) equivalents	Manufacturing, power plants
		kg of ammonia	Manufacturing, food processing
Ocean acidification	OA	kg of carbon dioxide (CO_2) equivalents	Manufacturing, transportation
Aquatic eutrophication potential	aEP	kg of phosphate (PO_4^{3-}) equivalents	Fertilizers
		kg of nitrates (NO_3)	Fertilizers
Terrestrial eutrophication potential	tEP	kg of phosphate (PO_4^{3-}) equivalents	Fertilizers
Photochemical ozone creation potential	POCP	kg of ethylene (C_2H_4)	Chemical plants, petro-chemical, agriculture

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RESÚMENES

Transformando la Educación Financiera y Empresarial: Las Oportunidades Únicas de las Finanzas

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Resumen. La humanidad enfrenta el reto de transformar el sistema global actual de producción, distribución, y consumo en uno que sea más justo y sostenible, y que pueda ser sostenido por los recursos de la tierra.[1] Desafortunadamente, la educación de negocios moderna es "parte del problema" de la insostenibilidad actual porque apoya, permite, justifica, e intensifica los aspectos insostenibles del sistema empresarial existente. Aunque todas las personas tienen la oportunidad de contribuir a esta transformación y son "llamados" a hacerlo, los administradores y profesores universitarios de todas las disciplinas tienen una oportunidad especial y una obligación de atender al llamado.

Este artículo es el segundo de tres artículos planeados que se enfocan en la educación empresarial, y particularmente en las enseñanzas financieras dentro de esa educación. El articulo comenta sobre la oportunidad excepcional que tienen los profesores financieros de convertirse en "parte de la solución" y como algunos ya lo están haciendo. El artículo

[1]Por ejemplo, consulte Francisco, *Laudato Si': Sobre el Cuidado del Hogar Común* (Ciudad del Vaticano: Libreria Editrice Vaticana, mayo 24, 2015). Disponible en http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html (acceder marzo 9, 2018).

concluye describiendo el por qué los profesores financieros en escuelas de negocios religiosas, como los de las universidades jesuitas del mundo, tienen una oportunidad especial de contribuir a esta transformación.

Palabras clave: educación empresarial; enseñanzas financieras; sostenibilidad

Hacia una Teoría de las Artes y la Sostenibilidad

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Resumen. Para lograr avances reales en lo que solo se puede clasificar como emergencias ambientales, necesitamos una base amplia de consenso público para actuar, dado que la motivación y participación pública son prerrequisitos para que los legisladores implementen lo que nos instan los científicos que hagamos. En este contexto, umbrales representativos de motivación y participación pública pueden ser creados al tocar los corazones de los individuos, un área donde las artes tienen la ventaja competitiva. Aun así, los esfuerzos para mejorar el entendimiento en estos espacios deben incorporar suficiente complejidad dado el alto nivel de complejidad y desafíos interconectados de la sostenibilidad. Es por eso qué este artículo representa un marco teórico para las artes y la sostenibilidad basado en las variables de la complejidad artística y la participación pública. Las artes, cuando tienen suficiente alcance y libertad, pueden aportarle a la sociedad sus capacidades de coordinar y estimular a las multitudes alrededor del mundo a tomar pasos fundamentales hacia un planeta sostenible.

Palabras clave: artes y sostenibilidad; complejidad y sostenibilidad; participación pública y sostenibilidad

Visión y Practica en Sostenibilidad: La Aparente Brecha Entre lo que Dicen los Lideres Corporativos y las Percepciones de Estudiantes de MBA Polacos y Estadounidenses de Tres Universidades

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Resumen. Este estudio se enfoca en la necesidad crítica, determinada por los ejecutivos, de incluir la sostenibilidad en las estrategias corporativas, y la percepción de estudiantes de MBA sobre la manera en la cual sus respectivos programas los están preparando para enfrentar los retos de la sostenibilidad de manera exitosa. Estudiantes de programas de MBA de nivel medio, uno de Polonia y dos de EE. UU., fueron entrevistados sobre su percepción de cuatro temas: 1) en vínculo entre las practicas sostenibles y el rendimiento corporativo; 2) los obstáculos para incluir practicas sostenibles en sus trabajos actuales; 3) el efecto que tiene ser un defensor de la sostenibilidad en sus carreras; y 4) la eficacia de su programa de MBA al fomentar perspectivas de liderazgo y habilidades relacionadas con la sostenibilidad. Aunque los estudiantes concordaron en el vínculo positivo entre las practicas sostenibles y el rendimiento, estuvieron en desacuerdo en los otros temas. Este estudio habla sobre las implicaciones que tienen estos hallazgos para los miembros de las facultades que desean cerrar la brecha entre lo que dicen los ejecutivos que necesitan de los graduandos en cuanto a la sostenibilidad con relación a la capacidad de los programas actuales de MBA de suplir esa necesidad.

Palabras clave: practicas sostenibles; defensa de la sostenibilidad; liderazgo; educación administrativa transcultural

Empresas Confesionales Socialmente Responsables: Casos Selectos de las Filipinas

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Resumen. Las organizaciones religiosas han jugado un rol en el desarrollo internacional por mucho tiempo y están cada vez más involucradas en iniciativas sostenibles. Como están motivadas por un conjunto de valores distintivos, tienen estilos operativos y administrativos particulares, y tienen un lugar único dentro de las comunidades y la sociedad en general, estas organizaciones están posicionadas para ser distintivamente exitosas y sostenibles. En el caso de las Filipinas, la situación es única dado que hay un gran número de líderes empresariales y emprendedores cristianos que han puesto a "trabajar" su fe. Basado en una revisión de la literatura sobre las empresas sociales religiosas y en un análisis descriptivo profundo de tres empresas filipinas, este estudio propone un marco descriptivo para su éxito y sostenibilidad el cual consiste principalmente de dos elementos: a) el capital social cristiano y b) el liderazgo espiritual.

Palabras clave: organizaciones religiosas; organizaciones del tercer sector; capital social cristiano; liderazgo espiritual

Planificación Capital, Selección, e Inversión: Integrando la Sostenibilidad en la Toma de Decisiones

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Resumen. Tomando inspiración del llamado del Papa Francisco de buscar un nuevo rumbo que inculque la importancia de la conservación y cuidado del medio ambiente, hemos propuesto un modelo práctico que incorpora matemáticamente problemas de sostenibilidad en la planificación de capital, selección, e inversión.

La evidencia sugiere que los administradores aplican metodologías de valor actual neto (VAN) de tal manera que genera desventajas en las inversiones ambientalmente sostenibles. Si un modelo de VAN no considera los costos y riesgos de proyectos no sostenibles, entonces los beneficios potenciales de las inversiones de sostenibilidad alternativa serán vistas como menos valiosos comparados con los costos actuales. Las inversiones sostenibles, en su mayoría, requieren una inversión inicial más alta con beneficios a largo plazo y flujos de caja con horizontes distantes que son descontinuados con tasas exponencialmente altas. Además, los costos y beneficios ambientales identificados están generalmente limitados a ser asociados con ahorros relacionados a los costos de energía, mientras las reducciones ocultas en las externalidades son ignoradas. Es así, con su uso actual, que los modelos de VAN tienen un sesgo *en contra* de las alternativas sostenibles en la selección de inversiones.

Este artículo integra literatura de contaduría, finanzas, e ingeniera para desarrollar un modelo que incorpore los impactos ambientales y sostenibles a la selección de capitales a través de la evaluación del análisis

del impacto del ciclo de vida (AICV). Nosotros operacionalizamos el AICV para que los costos y beneficios ambientales escondidos puedan ser identificados, analizados, y valorados, y así lograr una mejor estimación de los flujos de caja. El modelo también integra los riesgos ambientales a los costos capitales al desarrollar una tasa de descuento ajustada al riesgo de sostenibilidad y un VAN de sostenibilidad-costo que capture efectivamente las exposiciones de la sostenibilidad en proyectos capitales, por consiguiente, resultando en un marco ajustado al riesgo de sostenibilidad para la toma de decisiones.

Palabras clave: sostenibilidad en los presupuestos de capital; análisis del impacto del ciclo de vida (AICV) ambiental; costeo del ciclo de vida (CCV); análisis del ciclo de vida (ACV)

The journal welcomes submissions from all management disciplines (e.g., international business, accounting, marketing, finance, operations) and related disciplines (e.g., economics, political science) as long as the manuscript contributes to our academic understanding of the role of management in achieving global sustainability. These articles shall be subject to a double-blind review process overseen by the editorial board. Submissions of theoretical work, empirical studies, book reviews, and practitioner manuscripts in either Spanish or English are all encouraged. Submissions shall be encouraged across two lines, with research briefs and book reviews not exceeding 1500 words and full research papers not exceeding 7000 words.

For submissions and inquiries, please send an email to the following address: jmgseditor@admu.edu.ph.

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