



Honors Committee
UNIAPAC Foundation Board
Think Tank Meeting

RESPONSIBLE BUSINESS
FOR A BETTER WORLD

March 17th, 2017
Paris



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AGENDA

MARCH 17th, 2017

MORNING SESSION

8h45

Welcome of participants.

9h00 - 9h15

Introduction by **Pierre Lecocq**, Chairman of the Uniapac Foundation.

9h15 - 10h00

Panel I • The simplicity challenge. A path for an equitable growth” by **Xavier de Bayser**, Banker, specialist of impact investment.

10h00 - 10h30

Open discussion moderated by **Michel Camdessus**, Former Managing Director of the International Monetary Fund and Honorary Governor of the Banque de France.

10h30 - 11h00 *Coffee Break*

11h00 - 11h30

Panel II • “Gene Therapy - a Reinvention of Medicine: Social, Economic and Healthcare Delivery Implications” by **Dr Jack Reich**, CEO, Renova Therapeutics, USA.

11h30 - 12h15

Open discussion moderated by **Pierre Lecocq**, Chairman of the Uniapac Foundation.

12h15 - 14h00

Lunch offered by the Uniapac Foundation

AFTERNOON SESSION

14h00 - 14h30

Panel III • “Using Catholic Social Teaching Principles to promote Missionary alignment in High Performing Ethical Investments” by **Rev. Séamus Finn**, Chairman Missionary Oblates of Mary Immaculate, USA.

14h30 - 15h15

Open discussion moderated by **José Ignacio Mariscal**, CEO of Grupo Marhnos, México and Past-President of Uniapac International.

15h15 - 15h45

Panel IV • “Nutrition Facts of Faith-Based Investing: Leveraging Data Science to Confirm Compliance, Prudence and Congruency” by **Bruce Cahan**, President of Urban Logic, Adjunct Professor of Stanford University, Department of Civil and Environmental Engineering and Ashoka Fellow - Social Investment Entrepreneur, USA (*Presented by video conference*).

15h45 - 16h15

Open discussion moderated by **Brian Griffiths**, Chairman of the Trustees of “the Centre for Enterprise, Markets and Ethics” (CEME), UK.

16h15 - 16h30

Synthesis and Conclusions by **José Maria Simone**, President Uniapac International.

• VENUE

9 rue de Valois
75001 Paris

LIST OF PARTICIPANTS

▶ LUIS BAMEULE

Luis Miguel Bameule is President of Quickfood S.A. He holds a Degree in Business Administration UCA in Argentina. He is a former President and current partner of Asociación Cristiana de Dirigentes de Empresas. He was also Vice-President of Coordinadora de Industrias de Productos Alimenticios. Mr Bameule is member of the board of Editorial Kriterion S.A and he is a member of the Executive Board of the Sociedad Rural Argentina. Luis Alejandro Bameule, son of Mr Luis Miguel Bameule participates in the meeting on behalf of his father. L.A Bameule is Managing Director in Family Office and in the past has worked as Franchise and International Development Manager en Freddo S.A., the European Representative en Quickfood S.A and Manager en Accenture, London, UK. Luis A. Bameule will be the new President of Uniapac Latin America in July 2017.

▶ XAVIER DE BAYSER

ESCP 70. **1970/1971** French Agency for Development in Niamey, Niger. **1972/1988** Credit Chimique, affiliate of Pechiney and Total CFO. **1988/2003** Founder and General manager of Flindice, first quantitative active portfolio management company in Europe. **2003/2010** Founder and General Manager of Ideam (Integral Development Asset Management), first asset management company entirely dedicated to SRI. Founder of Medicis Comity for Sustainable Development. Founder of Harmony Award with Unesco. Chairman of Cercle St Jean Baptiste (1976/1986) for interreligious dialogue. Author of 3 books: *Petit livre du développement durable, l'Effet Papillon, l'Économie cordiale*. Chevalier de la Légion d'honneur.

▶ BRUCE CAHAN

Bruce Cahan is a Consulting Professor at Stanford University's School of Engineering, co-founder of Stanford's Sustainable Banking Initiative, a former CodeX Fellow at Stanford's Center for Legal Informatics, and an Ashoka Fellow. In Silicon Valley, Bruce is creating GoodBankTM (IO), as a "teaching hospital bank" for high-transparency, impacts-aware financial services, to shift the culture of banks and bankers. Geospatial Technology Pioneer. Bruce co-founded Urban Logic as a nonprofit in 1991 to improve urban sustainability decisions in real time. Bruce designed a geographic information utility, NYMAP, to see where and what infrastructure, environmental, transportation and emergency response assets and needs coexist. At first, City Agencies resisted pooling data, resting on their information fiefdoms. Through Bruce's research and advocacy with the Mayor's Office of Operations and

Budget Office, he found \$100 million in the City's capital budget to create NYCMAP, that is the cornerstone today for mapping and coordinating NYC operations. By the mid-1990s, the Federal Geographic Data Committee and the federal Office of Management & Budget learned of Bruce's success in NYC. With federal grants to Urban Logic, Bruce researched how to finance the nation's geographic information as infrastructure. Bruce's adaptive design led OMB to adopt a 49-state initiative to share open, standardized geographic information, much of which is accessible now through web services like Google Earth®.

▶ MICHEL CAMDESSUS

He is a former Managing Director of the International Monetary Fund and Honorary Governor of the Banque de France. He is a member of the Africa Progress Panel, chaired by Mr. Kofi Annan. He was a member of the UN Secretary General's Advisory Board on Water and Sanitation. Mr Camdessus was the Chairman of the World Panel on Financing Water Infrastructure (report: *"Financing Water for All"* - Kyoto-March 2003). Mr. Camdessus was educated at the University of Paris (Institut d'Études Politiques) and the National School of Administration (ENA). Mr. Camdessus joined the Treasury in the Ministry of Finance in 1960. He became Director of the Treasury in February 1982. During the period 1978-84, Mr. Camdessus also served as Chairman of the Paris Club, and was Chairman of the Monetary Committee of the European Economic Community from December 1982 to December 1984. He was appointed Governor of the Bank of France in November 1984. He served in this capacity until his election as Managing Director of the IMF (1987-2000).

▶ SERGIO CAVALIERI

President of ADCE Brazil and Uniapac Latin America, Sergio Cavalieri, Civil Engineer, postgraduate in Finance, Advanced Management Program at INSEAD France. Sergio is one of the members of the third generation of the family who founded the ASAMAR Group in 1932. The Group holds stakes in companies in fuel distribution, real estate and construction, manufacturing of components for steel construction, steel structure project, fabrication and construction, Data Center, renewable energy from wood and a new project in wind power generation. He is Chairman of the Board to the Holding Company of the Group, and member of the board of several companies of ASAMAR Group. Founder and Past President of ADCE - Association of Christian Businessmen of Montes Claros, Past President

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of ADCE Belo Horizonte, both in state of Minas Gerais. He is Vice-President of Industry Association of Minas Gerais, member of the Council for Social Responsibility of Brazilian Association of Industry (CNI), CNI delegate to the United Nation Global Compact in Brazil, member of International Advisory Council of Dom Cabral Foundation and Advisory Council of Bimbo Brazil.

▷ REV. SEAMUS P. FINN

Rev. Séamus P. Finn, OMI is Chief of Faith Consistent Investing for the OIP Investment Trust (www.oiptrust.org) and remains as a consultant to the USP JPIC office. He is an international leader in faith consistent and socially responsible investing and serves as a consultant to four investment committees. He has participated in four Vatican sponsored events on responsible investing and corporate social responsibility. He serves as Chair of the Board of ICCR (Interfaith Center on Corporate Responsibility), (www.ICCR.org), and was instrumental in the formation of the International Interfaith Investment Group (www.3iGnet.org). Séamus actively engages corporations in the financial and extractives sectors, as well as multinationals on labor and supply chain issues. He also serves on the boards of a number of organizations that are focused on domestic and global justice priorities in the public policy arena especially those that relate to the International Monetary Fund, the World Bank and the US government.

▷ BRIAN GRIFFITHS

Lord Griffiths has a background in academia, politics and business. He taught at the London School of Economics, was Professor of Banking and International Finance at the City University and Dean of the City University Business School. He was a director of the Bank of England from 1983-85. He left the Bank of England early to serve at N° 10 Downing Street as Head of the Prime Minister's Policy Unit from 1985 to 1990. As special advisor to Margaret Thatcher, he was responsible for domestic policy-making and was a chief architect of the government's privatisation and deregulation programmes. Since then, Lord Griffiths has been Vice Chairman of Goldman Sachs International and an international advisor to Goldman Sachs concerned with issues relating to privatisation, private equity and governance. He was very involved in building up the Goldman Sachs franchise in China. He has served on numerous boards in the UK and the US and is currently a non-executive director of Times Newspaper Holdings Ltd. Lord Griffiths was chairman of the Archbishop of Canterbury's Lambeth Fund and is Chairman of Christian Responsibility in Public Affairs.

He has written and lectured extensively on economic issues and the relationship of the Christian faith to economies and business and has published various books on monetary policy and Christian ethics.

▷ EDOUARD HERR S.J.

Edouard Herr, born in Luxemburg, 1943. Priest in the Society of Jesus. Master in Economic and Social Sciences and Doctor in Theology (Catholic University of Louvain) Professor em. of the Jesuit University in Namur (Belgium). Social, Economic and Business Ethics Professor and former President of the Jesuit Faculty of Theology in Brussels. Social Doctrine of the Church. Fundamental Theology. Spiritual Adviser to UNIAPAC and ADIC (Belgium) Publications, Conferences and Participation in different Associations about Church and Society.

▷ PIERRE LECOCQ

Pierre Lecocq has an extensive international experience in the automotive industry in a variety of engineering and senior management positions in the USA and in France. After starting his career in the USA, he was responsible for Alcatel industrial battery global activity and then joined Valeo as CEO of the Friction Materials and Engine Cooling Branches, both world leaders in their fields. From 2002 to 2015, he served as President & CEO of Inergy Automotive Systems, an automotive component manufacturer. With sales of 3 billion Euros, Inergy is the world leader in its field with 40 factories worldwide employing 7000 people. Since 2015, he manages a family holding company investing in scaling up start-ups in France and USA. Pierre serves also as Vice-Chairman and Treasurer of Fondation Apprentis d'Auteuil, committed for 150 years in France and with its international partners, to support, educate, train 50,000 vulnerable young people and families worldwide every year. Pierre Lecocq graduated as Mechanical Engineer from ENSAM, Paris, France, and completed a Master in Macroeconomics from Paris University and an MBA from Harvard University. Since 1984, he is an active member of the French Christian Executive Association, "Les EDC" (Les Entrepreneurs et Dirigeants Chrétiens) which he headed as National President from 2002 to 2006. He served from 2009 to 2013 as International President of UNIAPAC (International Association of Christian Executive Associations), present in 40 countries. He is President of Uniapac Foundation created in 2010.

▷ JOSE IGNACIO MARISCAL

Since 1974, Mariscal has been the CEO of Grupo Marhnos in the construction sector. At present, Mariscal is Director of Grupo Bimbo (a leader food

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industry) and President of its Planning and Finance Committees, Director of Capital Investment Society of Posadas de Mexico (largest hotel operator in Mexico), Director of Grupo Calidra (leader lime stone producer in Mexico), member of the Executive Committee and Chairmanship's Office of COPARMEX (the most representative business union in Mexico) and President of the Committee of Only One Economy, Everyone within the Law, of the Mexican Business Council (CCE for its abbreviation in Spanish). Mr. Mariscal is Member of the BIAC Executive Board from 2010 to 2012 (Observer and Associate Experts Group Organisations). He was President of UNIAPAC International from 2006 to 2009, President of National Confederation of the Associations of Christian Mexican Businessmen (UNIAPAC Mexico) from 2002 to 2006, President of Mexican Institute of CST (IMDOSOC) and Vice-president of FINCOMUN, a micro credit institution.

▷ SIGRID MARZ

Ms. Marz is a Senior Client Partner in our Brussels office and a member of our Global Technology Markets. She has a strong track record in advising clients on CEO and C-suite assignments, for Benelux-based companies as well as global technology corporations. Ms. Marz has also considerable experience in advising clients on how to align a company's talent strategy and capabilities with the overall strategy and culture. In addition, she applies her wealth of knowledge in the field of government and not-for-profit organizations as well consults in corporate affairs. Ms. Marz has more than 15 years of experience in senior executive search, most recently working out of her own boutique firm with high level clients on senior level coaching, development and executive search assignments. Prior to this she worked for a leading Search firm where she specialised in the recruitment for regional vice presidents, managing directors, country management teams, CTOs, CIOs, European Public Affairs and CSR leaders. Ms. Marz holds a Master (M.Sc.) from the London School of Economics, and two Bachelor degrees in European Business Administration and Theology respectively.

▷ ANTOINE MAYAUD

Antoine Mayaud, 64, father of four, with 7 grandchildren, trained as an agricultural engineer, spent the first 12 years of his career working within this field in Morocco, then western Africa and last in France. At the age of 35, he joined Danone where he worked for 13 years as responsible for their industrial organisations in France, Italy and finally all over Europe. In 1994, while still at Danone, he was appointed to the family board at

the Association Familiale Mulliez. When re-elected in 1998, he decided to concentrate fully on the AFM in two fields: First, as chairman of the family Equity fund, "CreAdev", which would assist family or non family young entrepreneurs, hence promoting the entrepreneurial spirit and helping to develop the AFM portfolio. Secondly, he wanted to help develop the "affectio societatis" (get family and their enterprises to keep as close as possible to one another) through training, education and by involving as many of them as possible as non executive directors or employees in the businesses affiliated to the AFM. Mr Mayaud was also chairman of Pimkie group, a business leader in the field of women's fashion, from 2004 to 2009.

▷ ROLANDO MEDEIROS

Rolando Medeiros is a Chilean business leader with senior executive experience in Latina America (Argentina, Chile, Colombia, Peru), USA and China and in several business sectors (metallurgical and industrial manufacture, oil and gas, energy and power generation and distribution, among others). He is CEO of Elecmetal S.A., an international holding company headquartered in Chile and of ME Global Inc. a US Delaware corporations. He serves as Chairman of the Board of Fundación Talleres Ltda. and seats in several domestic and international Boards of Directors. He participates in business associations (Consulting Board of the Industrial Association of Chile, SOFOFA), Non Profit Organizations (Board of Directors of Fundación Arturo Lopez Perez devoted to the prevention, diagnosis and treatment of cancer) and academic institutions (Consulting Board of the Labor Relations Cathedra of the Pontifical Catholic University of Chile). He is Vice-Chairman of UNIAPAC Latin-America and former President of USEC (UNIAPAC's association in Chile). He was educated at the University of Chile and earned postgraduate degrees in quantum chemistry and physics (Uppsala University in Sweden), business administration (University of Chile) and philosophy (Alberto Hurtado University in Chile).

▷ PHILIPPE MINE

Philippe Mine, born on 1956, is married and has 5 children. He is a medical biologist, and director of the laboratory of analysis of medical biology Mine, family business of 45 people in northern France. Member of the French association Les EDC, he is vice President of Uniapac Europe and Uniapac delegate for Uniapac Africa present now in 14 countries and founded 8 years ago. He is implied in numerous cultural associations, and trade union.

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▶ FRANCO NAVA

Franco Alberto Nava, born in July '39, is graduated in law at the State University of Milan. Officer in the Italian Army (1962). Official at the E. C. Commission, Department for technical assistance and cooperation with West African Countries - Yaoundé Convention (1964-1968). Executive in the corporate planning and then the financial departments of Pirelli Group (Financial Director of Pirelli Subsidiary "Itala" and engagement at Milan HQ), all this after a previous one and a half year service in the General Secretariat of Pirelli Group in Argentina (1968-1995) Last Pirelli Group appointment as General Manager of the Pirelli Group captive company for credit recovery and factoring (1993-1995). He has been President of UCID Milan Group during 9 years – three terms – (2004-2013). He has been Milan Rotary Nord Est President – PHF – (1999-2000). He is Board Member of two social solidarity Associations, both in the health care sector: Mirasole Association (cultural projects and scientific research); Cascina Verde association (Drug Community Rehabilitation). He is now a member of National UCID Board and UNIAPAC Europe President up to 2017.

▶ MSGR. OSVALDO NEVES DE ALMEIDA

Msgr Osvaldo Neves de Almeida is a Brazilian and Argentinian Lawyer with Economic and Commercial Law specialization He has an M.A. (baccalaureatus) in Theology and a Ph.D. in Canon Law (Rome, Pontificia Università della Santa Croce) Msgr Neves de Almeida acts Officer (Minutante) of the Holy See – Secretariat of State – II Section, from 1992. He is an Expert in International Public Law and International Economy. Desk officer for Economic and Social Matters of the UN and the multilateral system, with special attention to the work of II Committee of the General Assembly, the WTO, the Bretton-Woods Institutions and World Governance. Desk Officer for the general matters of the Security Council (Terrorism, Responsibility to Protect, Peacekeeping Operations, etc.) and the Secretariat of the UN. Desk Officer and Legal expert for questions related to the VI Committee of the G.A. (development of International Law), and the International Law Commission. His recent activities include: Patents on Life: Through the Lenses of Law, Religious Faith and Social Justice 'defining the boundaries' (Von Hügel Institute, St. Edmund's College, University of Cambridge, et alia) Cambridge UK (4-5 September 2015): Invited Lecturer; The Encyclical "Laudato Si", Meeting of the Media Officers and Spokepersons of Europe's Bishops Conferences; Prague, 17-20 June 2015: Representative of the Holy See – Lecturer; "The Earth is the Lord's and Everything

in it" – A Christian Perspective on Our Stewardship of the Environment, St George's House, Windsor Castle (12-14 June 2015): Invited Lecturer. Towards a New Global Mindset: Overcoming Social and Economic Exclusion; World Economic Forum, Rome, 18-19 November 2014: Co-organizer and Participant and the Seminar on the Global Common Good, Vatican, 11-12 July 2014: Representative of the Second Section of the Secretariat of State.

▶ DR. JACK W. REICH

CEO & Co-founder Renova Therapeutics, Dr. Jack W. Reich has extensive experience in the field of gene therapy. He was a co-founder of the first gene therapy company, Viagene, which was acquired by Chiron. He went on to found Collateral Therapeutics, the first gene therapy company focused on cardiovascular disease, later acquired by Schering AG. Throughout his career, Dr. Reich has had significant interactions with regulatory bodies and has been responsible for regulatory approval and successful introduction of a broad range of new drugs. Dr. Reich received a B.A. in Biology from Washington and Jefferson College, a B.S. in Pharmacy from Creighton University, an M.S. in Hospital Pharmacy Administration from Temple University and a Ph.D. in Pharmaceuticals – International Pharmaceutical Administration from Temple University.

▶ JOSE MARIA SIMONE

José María Simone is President of Uniapac International. He holds an Industrial Engineer degree from UCA (Universidad Católica Argentina). He has over 30 years of experience in international financial business as well as experience in corporate management. Since 2010 Mr Simone is partner and board member of Impulsar Soluciones Agroempresariales SA – Buenos Aires – Argentina for the management of investments in agribusiness and real estate in South America. Vice-president of Citibank in Argentina, Brazil and USA, as head of the corporate business. Vice-president of Uniapac Latin-American. Board member of Uniapac Foundation. Former President of ACDE (Christian Businessmen association – Argentina). Vice-president of Fundación Valores para Crecer – Argentina. Foundation dedicated to train in values and ethics to managers.

▶ RICHARD TURNBULL

Richard Turnbull is the Director of the Centre for Enterprise, Markets and Ethics. He brings to the Centre a wide range of experience in business, the church and public life. He holds a degree in Economics and Accounting and spent over eight years as a Chartered Accountant with Ernst and Young. Richard also holds

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a first class honours degree in Theology and PhD in Theology from the University of Durham. He was ordained into the ministry of the Church of England in 1994. He has served on the General Synod and was a member of the Archbishops' Council of the Church of England; the Chairman of the Synod's Business Committee and chaired a number of church working parties including a review of the remuneration of the clergy. Richard served in the pastoral ministry for over 10 years before being appointed Principal of Wycliffe Hall, Oxford, a Permanent Private Hall of the University of Oxford, in 2005 where he served until becoming the Director of the Centre in 2012. He is the author of several books, including a biography of the social reformer, Lord Shaftesbury. He is a Fellow of the Royal Historical Society and a Visiting Scholar of Campion Hall, Oxford.

▷ RODRIGO WHITELAW

Rodrigo Whitelaw is the General Delegate of the UNIAPAC Foundation. Mr. Whitelaw holds a Bachelor degree in Economics and Business Administration and a PhD in Political and Social Sciences from the Catholic University of Louvain. Specialist in Innovation-based socio-economic development, his areas of expertise are the spatial dimension of the innovation process, the analysis of Global Value Chains and cluster competitiveness at a global level. In 2009, he has published his PhD thesis entitled *"Mechanisms of cooperation in industrial clusters: the cases of the tile industry in Spain and the salmon farming in Chile"*. He

has worked in the financial, academic and public sectors in Europe and Latin America. His research interests are in corporate social responsibility, business ethics and corporate governance.

▷ ETIENNE WIBAUX

After studying Betriebswirtschaft at the University of Köln (Germany), he got a Master Degree at the CPA in France. He joined the family-owned textile company Textiles : SUBRENAT SAS in 1966 and became President in 1978 until today. Throughout his professional life, he engages in educational, social, economic and financial life. President of the Jeanne d'Arc School (Mouvaux), then Administrator of the school of engineering ICAM of Lille, he is now Administrator of the "Higher School of Journalism" in Villeneuve d'Ascq. He will lead the Association named "Christian Life" in the North, then become President of the E.D.C. In France (1994) and then of UNIAPAC International (2003). He will be a member of the GPA Entrepreneurs Commission in MEDEF, will chair SIGEFI Nord, SIPAREX Group (Private Equity), will become Vice President of the Union of Textile Industries and President of the French Institute "Textile Habillement" (2003). Today he is in charge of transmitting the family business to his son and his team of associates. He and his family have created the Cassiopée Foundation, serving the poorest in the world, and recognized Public Utility in 2011. In May 2003, he received the Medal of the Légion d'Honneur awarded by the Ministry of Economy and Finance.



INTRODUCTION



Pierre Lecocq,
Président Fondateur
du Fonds UNIAPAC

Chers amis, dear friends,

Let me first express my personal joy to meet you here again, as almost every year now. Good friends, I want to thank all of you for attending, and I particularly thank those who have traveled a long way to be here: from Argentina, from Chile, from Mexico (just arriving yesterday and leaving tomorrow), from California, and from nearby countries in Europe. Thank you all for the time you took and the concern you have for the work we try to carry on. Thank you very much for attending this meeting.

As I said in my introductory letter, in past meetings of this Think Tank we tried to focus more on the basic vocation of UNIAPAC, which is to help our members to develop and live up to the ghost protocol in their daily lives and avoid the divided syndrome that is always present in our actions in our companies. This has nourished our network through a series of documents over the last five years, which I think have been very much welcome by all our associations and helped our members to indeed align themselves in their personal and professional lives.

In a world that is changing very rapidly, in a world which is very much shaken by all sorts of crazy things, and by long-term trends which are going to deeply change our world for our children and grandchildren, we [UNIAPAC] thought that it would be interesting to focus on some of the main trends today, as we cannot address all the trends in one day. We will try to see

that if business, which is very often unfortunately at the roots of some of the problems that the world is meeting, if our business can also be part of the solution. We will try to see how sustainable business and sustainable economic business development can help the world and our brothers to face the difficulties of the world.

More and more of our fellow citizens are getting scared by what's happening in the world. There is a real demand for action and those demands cannot be addressed to our governments, as governments very often cannot really address the issues. If business is understood as it has been called by the Holy Father in *Laudato si'*¹, we believe that business — to get out of an autocratic approach and realize that business has a responsibility in the world where it operates, not only vis-à-vis their own employees but vis-à-vis the context in which it exists — can also be part of the solution.

Therefore, we have chosen three fields:

1. **Food and agriculture**, with the crazy idea of vegetable gardens in Africa and in other places. We will see what Xavier de Bayser can say about that.
2. Another trend, which has never been addressed so far at UNIAPAC, is the fantastic progress in medicine. Particularly the progress of **gene therapy technology** which has been developed particularly in the United States. We are very fortunate to have here a reference in this field, Dr. Jack Reich, who has been engaged in several startups in this technology and who is now the head of a company that could really change the world by curing some major diseases.
3. Then, in the afternoon some talks about what could be **sustainable and responsible finance** led by Rev. Séamus Finn and Bruce Cahan.

It's going to be a full day and I thank you for your attention. I will stop there to give us as much time as possible to our discussions. The first subject on food and industry will be under the presentation of Xavier de Bayser. Michel Camdessus will introduce this topic, which has left him a little bit curious.

1. *Laudato si'*: On Care for Our Common Home is the second encyclical of Pope Francis.
http://w2.vatican.va/content/dam/francesco/pdf/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si_en.pdf



PANEL I

The Simplicity Challenge : A Path for an Equitable Growth

▷ MICHEL CAMDESSUS

Thank you very much for giving me this opportunity to be with you. I am here as your host and member of UNIAPAC (you told me I am a full member but I haven't seen a paper on that).

It's my privilege to welcome you on behalf of Napoleon Bonaparte [laughter], who had the good idea to give this apartment to the first governor of the Banque de France, so now the Banque de France is able to welcome all of you with the proper dignity. Napoleon Bonaparte had many ideas not only about Britain but also about central banking. As I have also been involved in this business I must give you the vision of Napoleon on central banking: central banks must be in the hands of the government, but not too much [laughter]. When I was a governor I insisted on "not too much." This being said, thank you. It's a privilege to have this opportunity every year to meet several of you, for some years now. I have nothing very special to say. I did have time to read Xavier de Bayser's presentation and it is an extremely exciting topic, very timely indeed. It has something which is now not very frequent in Europe: a flavor of utopia. But, it is a utopia that has the possibility to be checked and verified permanently. This is the utopia we as businessmen prefer. We need utopias! The world would disappear promptly if it didn't have this kind of oxygen to live.

Xavier, thank you for accepting to make this presentation. I was asking you when we arrived how you would prefer to be introduced. Are you a banker? Are you a specialist of responsible investments? Are you a specialist of agriculture, gardening? You're all of that, but having a look at your bio, I see that you started your life in Niger while working for the French agency for development. There, certainly, you had your first experience of what it is to do some gardening in very special difficult conditions, and gardening as a vital thing for human beings particularly in Africa. Thank you for being with us and for your presentation on *The Simplicity Challenge*.

When we open our discussion later on, we will have at least two things for discussion:

① Your extraordinary project: to have a garden stretching from Dakar to Djibouti, in this not so peaceful area of the world.

② Naturally, the simplicity; the theology of simplicity.

We will be guided not only by Saint Bonaventure but by Father Edouard Herr and all the theologians here (I am not one of them). Xavier, you have the floor.

▷ XAVIER DE BAYSER

Thank you. It's very courageous to invite me to speak because when I was working in finance the journalists called me *le financier baroque* [laughter]. I don't know if it's exactly what the Banque de France wants to be for a banker, but *baroque* is interesting because it's a mix of rules and creativity.

You [Michel Camdessus] asked me if I was a banker or a gardener. There is a very close link between gardens and finance, because when you are a gardener you have to deal with all aspects of time: present time, cyclical time, time which passes, and weather. If you are in finance you have to deal with short-term, long-term, *conjuncture*, and so on. This is exactly the same. If you want to be a good gardener perhaps you will be a good banker.

▷ MICHEL CAMDESSUS

And the opposite is true also? [laughter].

▷ XAVIER DE BAYSER

Let's start this morning meeting with gardening. You know that small things can change the world, and I had this in mind when I met Pierre Moussa² thirty years ago. Pierre Moussa came to me and asked if I was interested in Africa. I said, yes I am interested and he said, I have a project for you. Moussa came with an engineer of the French National Institute of Agronomic Research (INRA)³, a specialist of vegetable gardens in Africa, and I was very convinced of the huge possibility of

2. Pierre Moussa is the former CEO of Paribas and President of La Fondation pour l'entreprise africaine.

3. National Institute of Agronomic Research (INRA) official site: < <http://www.inra.fr/> >



PANEL I ► THE SIMPLICITY CHALLENGE: A PATH FOR AN EQUITABLE GROWTH

vegetable gardens in Africa. I decided to invest with Moussa half-half. Always until now he put one half, I put the other half and it was a good deal for us.

We started but it was difficult to find a good business model. At first, we sold vegetable seeds, but it was impossible to organize a distribution network for products with such a small price. We spent some two years trying but it was very difficult. After this we decided to sell kits. Each kit was for an African to have his own vegetable gardens, complete with tools and seeds. But then we faced difficulty with training. Individually it is difficult to train millions of people, and it was too costly. Finally, we found the right business model by creating vegetable parks. We started that about 10 years ago with AREVA⁴ in North Niger, with very good results producing vegetables in the desert. We have done other parks, especially one that was inaugurated last month in Congo-Brazzaville. It was a success and we showed that what we said was true.

At first it was so difficult, that at that time, I thought that to scale these gardens, I have to write a book. So, six years ago I wrote the book *L'effet papillon*⁵. But it was not sufficient to scale, so I reflect upon the difficulty to apply simplicity. Simplicity is very difficult to apply, it is very complex [laughter]. Perhaps I will go to the origin of the word. Simplicity comes from two Indo-European roots. One, *sim*, which means identity. The other, *plic*, which is fold. So *simplicity* is "one fold." You have your hand open [holds out one hand] and you can offer, but after you have duplicity [holds out both hands], double-fold. It is because of duplicity that simplicity is so difficult to apply.

I will now read from my text. For decades now, the international campaign against hunger and malnutrition has been ineffectively managed. Governments and international organizations have developed an ecosystem supposed to combat hunger that has been generally disastrous.

Billions of dollars have been spent by developed countries in order to promote agricultural exports to developing countries. Last year it was four hundred billion euros. Such intensively mechanized agriculture, using chemical products and genetically modified organisms, has deteriorated soils and threatened the environment.

► PIERRE LECOCQ

I've seen that in Mauritius. I visited an operation in Mauritius and a guy told me that he would open champagne when he is able to identify a worm in the soil. Why? Because they have put so much product to keep insects out of the soil for twenty years to grow sugarcane, that the soil is dead. No more biological life in the soil.

► XAVIER DE BAYSER

The distribution of food to combat hunger has also been ineffectively managed: huge losses of cereals have occurred in reserve storage, cereals have been distributed to wealthy dealers rather than directly to the population suffering from hunger, and hefty commissions have been paid to employees of international organizations.

For example, in our garden it was very difficult to ask FAO⁶ to use our gardens because once you have done this garden you have no possibility to get commission so it is not interesting to them. As OMS⁷ for drugs.

The entire situation could be radically transformed simply by implementing a few basic ideas. We have come to simplicity.

Let us take the example of vegetable gardens that might possibly save the whole world from hunger. It would surely seem more effective to grow vegetables in countries suffering from famine than to import cereals from developed countries. The unexploited potential for food production in tropical countries is colossal due to three main reasons:

- 1 Agricultural techniques were applied from the North to the South. It was completely stupid because they are not at all the same circumstances or the same climate, but that's what they did.
- 2 They wanted to develop industrial products, cotton for example, and therefore destroyed the soil.
- 3 You have a lot of surfaces in Africa not used for culture. This is 60 % of the free area for culture in the world. This is a huge possibility for food production.

Vegetable seeds are much more productive than cereal seeds: their unitary weight is one hundred times inferior. Judiciously cultivated they can provide six times more food in a year. The nutritional potential of vegetables is much greater and more diversified than that of cereals. In tropical countries food-production can be boosted simply by optimizing the combined effects of water and sun. This is the peak of my speech: *how to optimally combine sun and water*.

Sunshine is a free commodity that is largely wasted in tropical countries, but very few people have reacted to this state of affairs. When you see an open water-tap running without being used, you react immediately, but nobody cares about seeing solar energy unexploited for the growth of vegetables.

4. AREVA official site: < <http://www.areva.com/> >

5. *L'effet papillon: Petits gestes, grands effets pour une croissance durable* (ISBN: 978-2-8098-0475-1)

6. Food and Agriculture Organization of the United Nations.

7. World Health Organization (français: Organisation mondiale de la Santé).

PANEL I ▷ THE SIMPLICITY CHALLENGE: A PATH FOR AN EQUITABLE GROWTH

For example, if you look at vegetable gardens alongside the Niger or Senegal Rivers, you can observe that these gardens only produce vegetables for three months in the year, whereas sun and water are available year-long. Simply reacting to such a situation, in order to find a means of growing vegetables all year-round, could easily lead to a breakthrough that could eventually save the world from hunger. Just by optimizing sun and water.

Photosynthesis is one of the more important of nature's mechanisms. I'm sure that you are familiar with photosynthesis: carbon dioxide plus water plus solar energy yields glucose plus oxygen, and when you breathe this oxygen you burn the glucose inside of your body and this is how your body lives. It is interesting to see the relationship between the growth of the plant and the life of human beings. Under the leaves of a plant there are millions of micro-cells that exchange two gases: carbon dioxide coming from the air and steam of water coming from the soil. This exchange produces energy that makes sap rise in the plant and make it live and grow. If there is not enough humidity around the florosphere, the plant is no longer turgid, and dies even if it has enough water and sun. You can water your vegetables, but if there is not enough humidity around the plant, it is worth nothing. A plant that benefits from enough permanent humidity can grow all year long even under high temperatures as in the desert. By maintaining a humid atmosphere, it is possible to boost photosynthesis, and dramatically reduce the need for water.

Extensive research in maintaining humidity has shown that productivity can be multiplied by four, and the need for water divided by ten. This is a study we published and a scientific demonstration of what I am telling you. I tried for a long time to find a ratio. Finally, I found WATFOR: water-to-food ratio. WATFOR is how much water you need to produce one kilo of vegetables. If you use this ratio for our techniques, the WATFOR (water-to-food ratio) is increased forty-fold. The engineer of AREVA did not want to believe this because in the desert there is not a lot of water, but after two years they verified and checked that it was in fact the reality.

Using this approach two billion human beings could be adequately fed from five million acres of vegetable gardens, which is approximately the area of the Beauce region in France. Two billion people! So, when somebody tells you that it's impossible to feed all the seven billion people on Earth, it is not true. They could be fed very easily using vegetable gardens. On two-and-a-half acres it is possible to produce seven hundred thousand bio-lettuces in a year. As we sell this to hotels, etc. our margin is one euro per salad – profitability

is huge. From a surface of seventy square yards it is possible to feed a ten-person family for a whole year.

Within the last twenty years the French company JTS (now JTAgro)⁸ has successfully developed a practical method for implementing this type of agriculture in Africa, with the help of Jean-Marie Cordier (an engineer from the French National Institute of Agronomic Research INRA).

The challenge is now this: to make this simple practical solution become an effective leverage for saving the world from hunger. A start could be to create vegetable gardens along the seven thousand four hundred kilometers of the "green wall" extending from Dakar to Djibouti. This is a project of United Nations. They want to plant trees and I think it could be a good idea to also have vegetable gardens. I will try to make that utopia feasible.

Planting three hundred and fifty vegetable gardens each of fifty acres could feed seven million people and create thirty-five thousand jobs. If the scheme succeeds, these gardens could be enlarged in order to sell fresh vegetables to the big African townships. In the future inflatable air-ships could be used for refrigerated transportation.

So this is the beauty and surprise of a simple thing. Doing these vegetable gardens in the desert I asked myself how could these vegetables be transported correctly, because refrigerated transport is very costly. I discussed with Pierre Moussa and proposed to Pierre that we use inflatable airships.

▷ MICHEL CAMDESSUS

Pierre Moussa was the CEO of Paribas at the time he started working with Xavier de Bayser.

▷ XAVIER DE BAYSER

Pierre has many relationships and he told me, I know a Canadian guy who has a relationship with Lockheed Martin⁹, which is the most advanced company for airships. So, we take our suitcases and go to visit Lockheed Martin, which has no Marketing Department because they are doing whatever the State of Defense wants them to produce. We tell them there is a big possibility to develop this airship privately. For five years now we are working for an operating company. Next week we will sign a contract to buy twelve airships to use for North Canada and Africa. These airships you can take-off and land from boats. After, you transport them to the desert. This very importantly diminishes the cost of transportation. We think that we can divide

8. JTAgro official site: < <http://www.jtagro.com/> >

9. Lockheed Martin official site: < <http://www.lockheedmartin.com/us.html> >



PANEL I ► THE SIMPLICITY CHALLENGE: A PATH FOR AN EQUITABLE GROWTH

the cost by three and divide gas emissions by ten. At the end of the decade I believe we will use airships to transport our vegetables.

A recent study has shown that the market for fresh vegetables in Africa within the next twenty years could attain some fifty billion euros. It's huge! The "green wall" surface from Dakar to Djibouti could be able to satisfy this demand. However, such a project could only be undertaken by private companies.

To create three hundred and fifty vegetable gardens of 50 acres each, an investment of seven hundred million euros is required. This capital could easily be raised, given the high profitability of the gardens. The investor would recover his capital within three years. Part of the profit could be used for training African personnel and for planting medicinal plants to cure endemic diseases (for example, an infusion of *Artemisium Afra* can cure malaria within ten days with a 99.5 % chance of success). So, these gardens could be called "gardens of peace". They represent solutions to the problems of famine, immigration, terrorism, child labor, global economic growth and even national budget deficits.

Simplicity thus really becomes beauty. This kind of simple approach could be extended to tackle problems of malnutrition, energy production in remote areas of poor countries or eradication of endemic diseases. Solutions exist! During the lunch if you want or during the questions I will explain that because I am in charge of these three parts. Only the private sector has the means of finding the best solutions for the development of poor countries. However, nothing is possible without love energy!

So far, we have together followed the path of simplicity. But I can already hear the chorus of the sceptics beginning the song of "Utopia". All these initiatives, however praiseworthy they may be, will remain as isolated oases of fervor that will inevitably be deadened by the dryness of our individualisms. But is it not in the desert that we discover the breakthrough that can overcome our aridities (the desert waters our hearts and quenches our thirst for humanity)?

It is only when we lack everything, that we can discover what is essential, when the white flower, saxifrage, can grow in the fault of hard rock, and when frailty can be united to strength. The origin of the word saxifrage: *saxi* which is rock, and *fragus* which is fragility. Saxifrage is therefore a symbol of the mix of strength and fragility. As we seek to heal the wounds of our most unjust world, in contact with its fragilities, on the paths of

simplicity, on the way to our native home and listening to the teaching of nature, we discover the fundamental norms of life which are also applicable to man.

Saint Bonaventure tells us that the natural order is merely the reflection of the divine order. These laws are simple and based on exchange, a veritable ecosystem of love. Nature is an exceptional educator and emphasizes the virtues of simplicity: earth, seed, water, and sun are the bases of life. Our secret gardens, our souls can receive their inspiration. There exists a genuine analogy between the photosynthesis that drives the growth of plants, and the exchange of love that is the vital force of our souls. God's word that fertilizes our souls, the water of the spirit, and the rising sun of Christ that comes to visit us, all these make the sap of life rise within us. Just as the exchange between carbon dioxide and steam of water make the plant's sap rise and keeps it turgid, likewise the exchanges of love with our brothers keep our souls alive. Love flows from turgid souls. Thus, our oxygen is our neighbor. The love of our neighbor, thanks to a sort of sacred anabolism burns the cells of our souls, thus maintains our vital forces.

In this way, at the end of the path of simplicity, and in contact with nature, we discover that by seeking to procure food for our brothers, we discover the source of the vital energy needed to transform our utopia into reality. For, in order to take up the challenge of simplicity, we need the vital force of love. The path of simplicity leads us back to our native home, to the treasure of our origins. Thanks to our exchanges, fraternal love becomes the yeast of our human dough. Our future lies in the heart of man. Simplicity, Leonardo de Vinci's supreme sophistication, appears to us the best path to follow. Thus we follow Fénelon's advice in *Telemachus*: "*Place your glory in simplicity.*" In this journey towards our native home we again find in Lamartine's poetic intuition¹⁰: "*Inanimate objects! Have you a soul that adheres to our soul and forces you to love us?*" So, our experience in the field brings us back to the peak of the reflection of our greatest artists, and prophets of self-sustainable development. At last we rediscover that coherence which encourages us to take up the challenge of simplicity.

From gardens to finance! [Applause]

10. *La Terre Natale, Book Three*

PANEL I

Discussion

MICHEL CAMDESSUS

— “Thank you very much indeed. Never in my life have I been in such an extraordinary situation. I think how simple it would be to feed humanity and get rid of malaria simply by substituting simplicity to all the love and respect of complexity, of feasibility, of sustainability, which are very strong concepts on which international organizations have used for the past 75 years now to solve the problems of the world. You are telling us that finally they were wrong, because they prefer complexity to the basic simplicity given by our God for the beauty of human life.

Certainly, our friends here will have a few questions for you [Xavier] concerning the feasibility of saving the world from hunger and from malaria and other diseases. Simply put, why hasn't this been done a very long time ago? Why for centuries has humanity preferred cereals to vegetables? Plenty of questions indeed. Let's try to save half of our time for a reflection on simplicity.

ANTOINE MAYAUD

— I happen to have worked for four years in Africa helping farmers, and then I joined my family who is involved in retail. It's the main retail family in France. I came to this thought that I took it with the wrong side, or without all the proper sides, when I was in Africa. You'll think I am a little bit biased by my family culture, but I think we should also try to convince not only farmers but also Indian and Lebanese retailers. That is, the downstream. I'm very much struck by how we started out Auchan retailer, a food retail company in China. There was a big lack of vegetables inside our stores. What we did, we had the demand and we went to see farmers telling them we need vegetables, and thus doing we improved very much farmers' production. There was no problem about distribution. I think very often, and that's what I was doing in Africa, we used to work only with farmers thinking that the retailers were the bad people. We were fighting against retail people. I think it is very often the wrong way around.

XAVIER DE BAYSER

— I agree. Fifteen years ago I tried to introduce a papetière. There was a specific location that was very good to produce paper. We had gathered people from Finland, from everywhere. We used a white elephant and planned to transform an old sugar plant into a paper plant. Everything was ready, but it fell through at the last minute. It was over because Lebanon gave envelopes to the Minister. And because they were an importer of paper paste, our papetière was finished. So, the first question to ask when you invest in Africa is, *who are the people?*

PHILIPPE MINE

— There is another factor. In medicine, we used to say it's easier to change to the religions of people than their eating habits.

XAVIER DE BAYSER

— This is easy, we produce légumes and we have the market you know? There is no problem to sell the vegetables.

MSGR. OSVALDO NEVES DE ALMEIDA

— Hello, my name is Osvaldo Neves. I think that most of you know me. First of all, thank you for the presentation, it was very good and very inspiring. I think that it is very important to find a way to tell these things to the Holy Father. Normally in my environment, in my office, as we all know these kinds of experiences, the trend is to see on one side business which means greed or aggression, and on the other side FAO and the welfare program. These are the two extremes, the two points, in which we move. These kinds of initiatives are not known. If you look at the *Laudato si'* encyclical, you will find that the inspiration, the ideas, are already there but not these kinds of concrete ways of doing things. Perhaps we can speak a bit later with José María Simone and Rolando Medeiros to see what could be done in order to give these ideas to the Holy Father. *Not* through a big study with a lot of paper because that will not arrive. If you just send a letter with a lot of paper, you will receive a very nice photograph of the Holy Father and a letter saying, we are very happy with what you are doing, and a blessing for your family [laughter]. The question is to find a very simple exposition like this, and tell it to the Holy Father directly. Or, I think that perhaps the work should be done in three ways. One, the Holy Father, the other one is the Justice and Peace, and perhaps also with my colleagues in the international desk of the second section who follow the FAO and welfare program and all these areas. Thank you very much again.

MICHEL CAMDESSUS

— Before asking ourselves is how to convey these ideas to the Holy Father, who certainly has plenty of excellent ideas arriving to his desk every morning, we should see how to make sure that these ideas are properly tested and communicated to the bodies in the world which are precisely in charge in saving the world from hunger. You will tell me that they have failed so far, disaster indeed, all these years, but OK, that is their job. There shouldn't be anybody else conveying opinions to the Holy Father on this idea other than those who really specialize in that field. But, this is a personal opinion from a guy who has tried many, many times to send ideas to the Holy Father.

EDOUARD HERR, S.J.

— There are two very big problems in this region. First is the current political turmoil. This is a region where there is no order at all so there would be a huge political problem on the basis of it. Second is water. Earlier I heard transport, I heard sun, I heard vegetables, but what about the water in the soil? I read, not in a very scientific paper, but I was with my barber and I saw *Paris Match* (very interesting *Paris Match*), and in it was praise for a French engineer who invented a kind of *échographie de sol* and could look fifty meters underground to see if there is any water underneath the soil. In one of the worst deserts in the south of Africa he saw that there is very much water there, and that he could bring that water to other regions. So, I wanted to ask you to come back to the basics: we have sun, we have transport (which I find very creative), and vegetables. Do you agree with the people who say that there is enough water in the soil? And you could exploit it?

XAVIER DE BAYSER

— Yes, there is water under the soil, and we can exploit it. In a Middle Eastern country, for example, there is a lack of fresh water, but they have salt water. What is interesting is that you can't put salt water in the ground, but you can put salt water at the surface in little canal that creates the humidity. So, the need of water is greatly diminished because you can create humidity with the salt water and only use drinkable water in the soil. But the quantity of water in the soil is not so important.

LORD BRIAN GRIFFITHS

— Can I say that I thought it was a remarkably imaginative, creative, Gallic presentation [laughter]. I found it very exciting. When you talk about the gardens of our souls I thought to myself, as I'm not a sceptic, but believe as I do, that there are weeds in the souls as well and therefore believing like the Holy Father that there is such a thing as sin. I then ask myself as an economist, what are the challenges faced by two things:

1. The creation of property rights, so that the people there have assured income because of property rights.
2. To the extent I've done anything in relation to development — it's not great but I've been a little involved — the problem of corruption.

So, property rights and corruption. I think what you're saying is very imaginative, and the airship I thought was almost like out of a special science fiction film.

XAVIER DE BAYSER

— You have to use a strategy of *contournement*. You do not have to face the enemy, you have to bypass them. If we are doing parks, like for example in Congo-Brazzaville, the landlord of the park is African. We offer this to the Africans. They are landlords with titles.

We reversed — I started with social business and now I have left that. I discussed this a lot with my co-crédit Muhammad Yunus. Social business is not good. You have to do *business*, profitable business with a social impact. This is the way to do things. If you do a park and it is working very well, you can train people and they can have their little garden around their home and there is no problem. There is no big surface, it's a lot of small surfaces. But they have to see something working. They have to learn somewhere. I don't know if you this Dominican Father, Godfrey Nzamujo. I invite you to buy this book, *Songhaï. L'Afrique Maintenant!*¹¹. You can also find a lot of discussions on Songhaï's YouTube channel. In realizing in thirty-five years something which is absolutely marvelous. Nzamujo creates this circular economy farm, without money, it is auto-financed. It's huge now and he trains students for six months at a time. Students come, they learn, and then they earn a diploma after they have shown that they have created their own farm. This is very encouraging. Now there are more than twenty farms like that in Benin, in Nigeria, in Ghana...

LUIS BAMEULE

— Thank you, I'm going to follow on Brian's comments. I agree with you on the corruption and property rights things, it's the basic parts of the structure that will make this work. You're solving logically some of them but then you need to build on something and that's apparently missing, if you want. I'm going to further ahead. This looks like it solves the problem of feeding my family, maybe my village. If we want to take this a further step up and say well let's really develop the area and build something from here we could export. From here we go to other countries. Then it starts facing the same problems that the microcredit industry faces. Now I have to pay taxes, now I have to engage a bank account, now I have to face tariffs. Para-ancillary measures in developed countries which are helping me, but at the same time they are not helping me because they are not letting me export my product to their countries. How do we go around that? Or is it the aspiration just to solve the hunger problem there? Which is great, a great step forward. But, how far are we looking? That's my question. Thanks.

JOSÉ MARÍA SIMONE

— Thank you. I find your comments very interesting. But you just mentioned a very important definition which was, 'to build up a business with a social impact.' For me this is key, because we need to build up a business to be an efficient production, but the last objective is not the bottom line as in the business. It's a different bottom line that has to be defined, which is the social impact it generates. Those who want to invest in that will look for a different type of return. This is the first issue. Then, it comes to our arena here, which

11. *Songhaï. L'Afrique Maintenant!* (ISBN: 978-2-2041-0723-5)

is how do we work with businessmen in order to be interested. And following those who have an aptitude to develop business where not only the financial result is important. And this takes me into the question or comment that Osvaldo just said, how do we put together the creation or your vision on how to feed a large part of humanity with an efficient way of production? And in a way that will assist and contribute to the social benefit of all, having the blessing of what today in *Laudato si'* brings up everything all together and puts everything in the same level of importance. We have to do that. For me, launching this concept gives us in UNIAPAC a tremendous responsibility to think about how we can push this in several ways. One is getting the knowledge of the Holy Father. Today we have the possibility of doing that. And also to talk to the ones who are going to produce the change, because you said that we have to teach, we have to let the people know how to produce, but in a way that it will generate the result in an efficient way, in a simple efficient way.

XAVIER DE BAYSER

— I think this the development of impact investment. Impact investment, we are not speaking about ISR (Investissement Socialement Responsable) which is finished. ISR is now impact investment. You have a lot of family offices we are very keen on for this impact investment. You have a lot of money there. There's a foundation in the U.S., close to Bill Gates, in California that helps family offices to select good projects for impact investment. I assist with this and I was astonished with the amount of money around the table. It's huge! These people want to make impact investments. They want a good result, but they also want a social impact. With vegetable gardens it's possible! It's possible because the profitability is very high.

First, Godfrey Nzamujo shows with training we can have a social impact, and second, we can use some part of the garden to grow medicinal plants like *Artemisium Afra*. In Congo we have one hectare with *Artemisium Afra* which we offer to poor people for the possibility to be cured of malaria. We can offer this because the cost of the treatment to be 99.5 % cured of malaria in ten days is only two euros.

JOSÉ MARÍA SIMONE

— Just a comment. You have the investors. You have the need. But you have to transform this into a large production to feed those in need. For this, you need managers. You need managers with social thinking processes and attitudes. This has to be done, because if not, it will be maintained at the one hectare, and that's fine.

MICHEL CAMDESSUS

— Before I give the floor to Etienne and Monsignor, could you in one sentence, tell us what is the difference between impact investment and socially responsible investment? What is the difference?

XAVIER DE BAYSER

— I was a founder of socially responsible investment in France, which is for listed companies mainly. You choose a company with good behavior and a good rating and you create the portfolio. This is socially responsible investment. The problem is that you have a lot of examples of companies with a good rating but bad behavior. We have a lot of examples there. So, I decided to go to impact investment. This is non-listed companies. So you invest in a company, and I can show you a lot of examples, because I created my own fund. I sold my company to the Crédit Agricole and with the money I create my own fund, and I invest in these [companies].

ETIENNE WIBAUX

— I think that by social impact we have to combine two strategies. The traditional one and yours. Let me go over the different steps we are doing in our foundation to make what you are doing. First step is water. We need water. You spoke about getting water by salt water, and this is OK. The second is ground. You know that family in different countries where our foundation is working have about 2,500 square meters per family. It's a very, very small piece of ground. So maybe you can solve that point. Third, we need seeds. You have spoken about seeds, combined seeds, new seeds adapted to the ground. This is OK. Fourth, we need money. The average amount of money per family, per beneficiary, is four dollars per year. If we invest four dollars per year over seven years, we get autonomy for the people, we get them responsible. The amount of money you have listed, eight hundred million, is a lot of money. We can do a lot with that amount of money.

Then, the key point is education. Some people have spoken about that already. To get the people autonomous you need a lot of education. About health, water, the ground, seeds, and about working together. Then we have to go to the government to get the cooperation. I would like that you go over all these steps. Finally, we have to leave. When we leave, and the people are autonomous, then we will have solved that social impact. If you leave what will happen? Because they want us to leave. They don't want, let me say, white people working with them. They want to work alone. So, what are you doing in this whole process? We cannot avoid one of these steps.

XAVIER DE BAYSER

— I agree with all that you have said.

JOSÉ IGNACIO MARISCAL

— I would like to follow up on what Etienne has said. We also have a foundation, and one of the issues we focus on is nutrition for the families. You are talking about business, but I think the first step is to start with the families. This is a particular problem in Mexico. What you're talking about will come later, the first step is to nourish the families. And



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then, Etienne, the situation you have just described will be a real issue. If you don't have the education and the technical skills, because these people don't have the skills, then they will fail in this process.

Our foundation makes small gardens and farms with chickens so that they really have a sustainable way of nourishing themselves. What we have found out, and we have been working with many families, is that we have not been able to really achieve success because of technicalities and lack of money when it is needed, or when the animals die or the gardens don't produce what they should, or they don't have the necessary seeds. All of these technicalities become really very complicated. I would say that, and we have that program in this foundation, scholarly on thirteen. We really believe that we needed support to really implement all these procedures, of what you've just described because if you don't do that, it won't work. Some will work, but very few. Then the success rate is not very good.

What we need is really to have an implementation of this process, very strongly supported by foundations and technical people in order to support the process. I would say that this is the real issue: we're leaving in a very practical way in the states of Chiapas and Oaxaca in Mexico and it's complicated because some achieve, some are selling now eggs and then they go to the next step of being businesspeople in order that they can understand what they should be doing. But it's a whole process. What worries me is the lack of success in many of them because we cannot assure them the continuity of the process.

MSGR. OSVALDO NEVES DE ALMEIDA

— To say something else, always thinking about the Church. For different reasons, I am in the Board of Caritas Internationalis, which is a confederation of the 169 Caritas from all around the world. They have a strong commitment for doing advocacy. But then they end up doing advocacy for the United Nations, but just because they don't know all these things. So it's very important to have this kind of integration *not* for coordinating your work. You have to do your own work. But, in order to help people to know what is happening and to take advantage of these ideas, first you must have an impact investment. Probably an impossible step, is to do something with the new dicastery on agriculture and food, and I strongly recommend that you try to find a way. I could help you to do that, and to also work with Caritas Internationalis. Third, I think the issue of communication and visibility is also important. To find a very simple way, sometimes with a two-minute video, in order to

spread these ideas and to reach the huge amount of people of goodwill, not just Catholics, but also Protestants and the other Christian denominations. Or Muslims, you know? Try to do things in this way. And I think perhaps what it lacks is communication to the Church, and communication between the different actors.

MICHEL CAMDESSUS

— I believe that the time is over. The only thing I can say is thank you very much, congratulations for your formidable initiative, courage, imagination and creativity. Really you have started this meeting putting the things in the right order.

RICHARD TURNBILL

— I just wanted to very quickly reflect on the theology behind what we've been discussing and I'll do it in 60 seconds, so I won't take too long.

I was just thinking about if you go back to the beginning of the Bible, to *Genesis*, you have a garden. And that garden was essentially a vegetable garden, of fruit, vegetable, and raw materials. If you go to the other end of the Scriptures, to the *Book of Revelation*, Chapter 22, you have a city in the new Heaven and the new Earth. That tells you a number of things, that we haven't got time to go through all of that obviously, but the most important thing it tells you is of a movement from a garden to a city. You might use a word like *development* to describe that movement. All of the things that Luis was talking about, are you going to move from the local to the regional to the national, are all part of that picture. In the middle of the Scriptures there's another garden, and that's the Garden of Gethsemane. What do you find in the Garden of Gethsemane? You find everything about our life today: struggle; you find conflict, you find difficulty, you find suffering. My reflection really is that in between Eden and the City (the new Heaven and the new Earth), we struggle in these visions of utopia, of perfection, and of imperfection. That is all part of our human existence, and it's all part of that word, *development*. From a perfect garden to a perfect city. I was just wanting to encourage you, just to put that in that little bit of context, about theology. If you're thinking about how you approach the Holy Father and how you approach others, I think you should at least think about how you present it in theological-thinking terms as well as, not instead of, but as well as, the economic terms.

PIERRE LECOQ

— Thank you Richard for this theological conclusion. Actually, not conclusion, but opening."



PANEL II

Gene Therapy – A Reinvention of Medicine : Social, Economic and Healthcare Delivery Implications

► PIERRE LECOCQ

Now we're going to go into a totally different field. Although, talking about business and social impact, it would be difficult to think of a business that could have a larger and more profound impact on society than the discussion that we are going to have. It's my pleasure to introduce here Jack Reich, whom most of you have already met. I met Jack about a year and a half ago and through him discovered what was happening on the health side of our society and the absolutely, truly, unbelievably unbelievable breakthroughs that are happening by the science applied to the very source of life, which is biotech and gene therapy. I thought it would be a very interesting opening for all of us to learn more about what is happening because this could really change the face of the world. And second, to maybe have a dialogue together about the ethical issues that this technology implies, like any new technology, on the way mankind is using it, for the good or for the bad. I think it's going to be very interesting.

Jack has been involved almost all his life on this subject. He is one of the world's specialists in this field so I'm sure we will all learn a lot and find this subject very interesting. Jack, the floor is yours.

► DR. JACK REICH

Thank you very much, and thank you indeed for inviting me to this wonderful and prestigious meeting. I'm looking forward to this opportunity to introduce all of you to a field that I helped to start in 1988. I had no idea at the time of course that it would be such an important part of my life, but that's the way these things go. You go down a path and you really don't know where it's going to lead.

For a little bit of background: When I was in college and trying to decide what I would do with my life, I got the idea that I wanted to get further training in something that was very rare and very important, so I decided to focus on international drug development and regulation. That was the area of my PhD dissertation. At the time it seemed crazy, I was the first person to pursue that sort of thing. What I wound up doing in my dissertation was to create a new scheme for drugs

to be regulated. At that time drugs were regulated in each country, and studies in the development that were required to register a drug had to be repeated. They had to be repeated in all of the different countries. I came up with the idea of *harmonization*, and that's sort of where all of this grew out of. That took me into the biotech industry when it got started in the 1980s.

When I joined my first biotech company I started with four other people, there was no industry. I had come from one of the largest pharmaceutical companies, Bristol-Myers Squibb, and I worked in the international division. That's where I learned the business. Little did I know that a few years later, I would be recruited to start one of these early biotech companies in 1987 and move to California. Along with four other men, we had a couple of different technologies, or products, we were going to develop. One of them was a gene therapy. Now I didn't know what a gene therapy was, and neither did anyone else, frankly. We decided, along with our investors, that it didn't really belong in this drug company I helped to start. So, we did what was called a *dropdown spinout* and created the first gene therapy company in 1988, called Viagene¹². We were going to develop a gene therapy to treat cancer. Gene therapies are really the use of genes, or DNA, as medicine. The medicines we're all used to are called small molecules. They're carbon-based treatments that mostly treat symptoms of a disease and we're all familiar with that. That's been the heart of the pharmaceutical industry up until now. Gene therapy was a brand new idea in 1988. The idea is to deliver a gene into a target organ in the body, and have the gene produce a protein which is the medicine. At its core, it's providing a protein that has been down-regulated or is missing in certain patients and thus causing disease. That's just as background. Now we'll go to the presentation.

Again, so what is a gene therapy? It's using a gene as a medicine in order to replace a defective, down-regulated, or missing gene in humans that is causing a disease. You may think of it at its core as hormone

12. Viagene official website : < <http://www.viagene.com/> >



PANEL II ▷ GENE THERAPY – A REINVENTION OF MEDICINE: SOCIAL, ECONOMIC AND HEALTHCARE DELIVERY IMPLICATIONS

replacement therapy, and I think some of you, or many of you, will be familiar with that concept. For hormone replacement therapy you might think of the situation which someone has diabetes because their body can't produce insulin, or they can't produce enough insulin. With gene therapy you have the ability to disrupt or reverse a disease process with a single administration. This is the opposite of drug therapy in which people have to receive a drug every day, or quite often more than once a day. Many medicines are given two, three, even four times a day.

Gene therapy is very reliant on a dependable delivery mechanism – that's really the key. The problem that has held back the field since 1988 is an inability to adequately deliver genes to a target organ, that is, having a method of delivery is the key. I've been very fortunate in my career, in my three companies, to have pioneered along with my colleagues, methods of gene therapy which deliver genes and high titer to a target organ and thus, the products I've developed work. We'll talk more about that and then we'll talk about two types of gene therapy. One is somatic, which affects the individual only, and another, germline, which can be passed on. By the way, generally this is not something you want to do.

The history of gene therapy began twenty-eight years ago. It's been focused for the most part on rare diseases and cancers. There's a couple of reasons why. Number one, is that these diseases in general result in death. Because of the fear of what a gene therapy might do, especially in the early days, the companies and the health authorities wanted to limit it to patients who were going to die. Thus, if there were safety problems, they might be tolerated because the patient was going to die anyway. We've come a long way since then. The investors in these companies are typically venture capital firms. These are people who, and I'm sure you're all familiar with this, that are basically bankers and they try to get a very high rate of return. Venture funds are often called alternative investments because they are thought to be high-risk and high-reward. These things are obviously relative, so I think when we get into the commercial aspects of what we're doing you'll see that venture capital at its best produces returns of 15 % a year. Relatively high, but because of that they tend to be very risk averse, and what they want to do is to create companies that they can sell to the large pharmaceutical companies. When it comes to gene therapy they focus those companies on these diseases that are uniformly fatal. Now, there have been about 2,400 clinical trials of gene therapies since 1989, which is quite a bit. Many, many different diseases and indications, hundreds of them, everything from hair growth to heritable diseases, you name it.

There currently are three products that have been approved. The first one of them was in China for certain cancers. The next was in Russia for peripheral artery disease. The most recent one was here in the European Union for the treatment of lipoprotein lipase deficiency, fortunately a very rare disease. This product was turned down three times in the European Union before it was finally approved. I think that the health authority, the European Medicines Agency (EMA), finally approved it for political reasons. They figured there are just a handful of these patients and they're going to die anyway, so they approved it. It was never approved in the United States. All of these have very limited efficacy, but it was a start.

Why do we use gene therapy? It's a technique that we in the business call gene transfer. The potential of this is to have physicians treat a range of disorders by using genes instead of drugs or surgery. This promise is only now coming into reality with the work we're doing along with a few others. It is very much like technologies that have come into biotechnologies since the 1980s. Things like monoclonal antibodies, for example, is analogous. For years and years the early efforts to develop monoclonal antibodies as therapeutics failed and people believed that it couldn't work, wouldn't work, etc. The gentleman who is now our Vice President of Clinical Development, at the time had that job at Johnson & Johnson and prior to that at Centocor, developed a monoclonal antibody for rheumatoid arthritis and got it registered at Centocor. On that basis Johnson & Johnson bought Centocor¹³ for that product, which today is the largest selling product that Johnson & Johnson has. It sells about \$8.5 billion a year. In the days it was being developed by Centocor, people believed that monoclonal antibodies would never work. So, we have seen an analogous situation here with gene therapy, which are now starting to work. Because of all the failures people are finally recognizing the aspects that you needed to have correct, which I'll present to you, which result in gene therapies that can work.

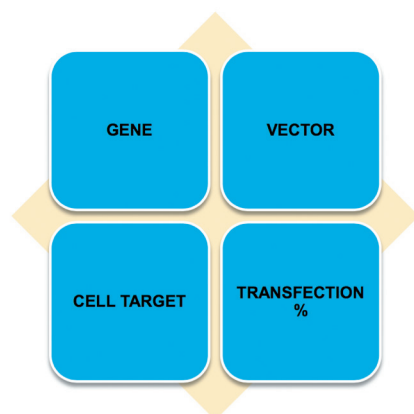
It's different from a daily pill, because pills treat the symptoms of disease. Drugs treat symptoms, they don't treat the ideology or cause of disease. Gene therapy, as we're practicing it, focuses on correcting the problem that's causing the disease. It can improve both cell and organ function, whereas drugs for example, to treat heart failure today simply decrease the body's demand for blood to be pumped. Gene therapy can confer all of its benefits with a single dose. And finally, it's not subject to the problems that we have with drug therapies like

13. Johnson & Johnson to Acquire Centocor. New York Times. July 22, 1999.
< <http://www.nytimes.com/1999/07/22/business/johnson-johnson-to-acquire-centocor.html> >

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compliance problems. When patients forget to take a dose or two, or they don't do it because they can't afford to buy the medicine, then the disease comes back very quickly. Also, there's something called drug-drug interactions, where you give a drug, or a physician prescribes a drug, to treat the symptoms of a certain disease not knowing that the patient he's prescribing for went to see a different physician last week and got a drug to treat a different problem. When you have the patient taking both medicines they interact, and are inactivated or cause side effects. There are other challenges as well with existing therapies.

There are four aspects to creating a gene therapy. Each one of these must be correct if the gene therapy is to work. If any one of these boxes is not correct, the product will not work. This has been manifested in gene therapy over the last thirty years over and over again.



Part of the problem is the people involved in this (many of them at the early stages are scientists) are not pharmaceutical product development people or even gene therapy experts. A person in a medical center might be an expert in genetics and they might think that this particular gene is key to this disease process, but the difficulty is that humans do not understand how genes interact. Only God understands that. So, someone working in a lab gets the idea that this particular gene is the key to a particular disease, and he clones the gene and he wants to put it in some sort of vector or carrier and then take a needle and inject it right into the organ and he's going to cure the disease. Well, he's made a couple of mistakes there, so it's not going to work. People do not have any understanding of how genes interact, regardless of the genomics that have been carried on over the last decade or so. We have identified all of the human genes, but the interaction of these genes is completely unknown. Anyone who believes that they understand that interaction is wrong or lying or both. It's very complex. There's hundreds of thousands of interactions possible.

So, you have to have the right gene, you have to have the right vector. In most cases today we use viruses to carry the gene into the body. Why viruses? Viruses were created for exactly this purpose: to infect. They infect humans, and other viruses infect animals and so on. Because of the thousands of clinical studies we've done, we have come to understand some of the viruses that can be helpful in this regard. The one that's been used the most in clinical trials is a common cold virus, what we call an Adenovirus. However, when we use it as a vector, to carry a gene of interest into human patients, we first remove the DNA in that virus so it can't replicate. Meaning you cannot get a cold from the injection of the virus, it cannot replicate. In the space that is created, we put the human gene, or we do at my company because we use human genes. We put that into the virus and then we can infuse it, for example into the heart, and I'll show you that.

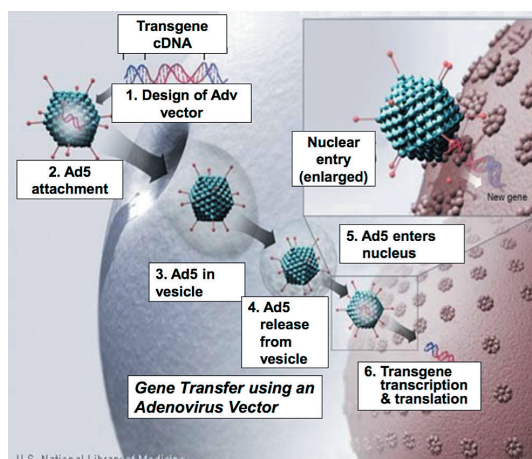
The other two things that are critical here are: the cell target and transfection. What is the target organ or cell – where are we trying to deliver the gene therapy to, what types of cells or what organ. Is it the heart? Is it the liver? Is it muscle cells? All these things are possible, even the human eye. Finally, transfection, how much uptake of the gene therapy can we get in the organ. This, transfection, is the crucial measure because if we don't have enough gene transfer there will not be enough protein produced by the gene in those cells or in the organ, and we will not get the effect we want.

Below is another cartoon which comes from the U.S. National Library of Medicine, and perfectly illustrates exactly what I'm talking about. This illustrates with our lead product, which is starting Phase 3 trials in the U.S. in a few months, is a treatment for congestive heart failure. Congestive heart failure is the leading cause of hospitalization in the United States for people sixty-five and older. I'll give you a definition of heart failure because many of you may not know what it is, but when I describe it I think you'll realize that you know people who have heart failure or have died from heart failure. Heart failure is one of the leading causes of death. In fact, heart disease is the leading cause of death in the industrialized world. There are millions of people who have heart failure. Heart failure is literally the inability of the heart to pump blood sufficiently to provide the oxygen needed by the organs in the body. It's a failure of the heart to be able to pump adequately.

How do you get heart failure? There's two ways that people get heart failure. Number one is they have a heart attack, or myocardial infarction, and they survive. About 80% of the people who get a heart attack survive, 20% don't survive (within 72 hours they are dead). The

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ones that survive all develop congestive heart failure because part of the heart muscle, the left ventricle, dies as a result of that heart attack. Usually about 15 % of the muscle dies. When that happens, the remaining tissue which is still alive, is inadequate to pump the blood adequately in the body. That's the definition of heart failure. That represents about half of all patients with heart failure. The other half come from people who get an infection in the heart, either a bacterial or viral infection, and the same thing happens. Part of the heart muscle will die and the heart can't pump adequately and they get heart failure. Heart failure is a disease that gets worse over time, it's degenerative, and it's uniformly fatal. Everyone that develops heart failure will die from heart failure, or a sequelae of heart failure (like the lungs filling up with fluid and they literally drown). So, if you get heart failure, you will die. The majority of the patients die within five years; somewhere between 50% and 70% of people with heart failure are dead within five years. It's a terrible disease, worse than most cancers. Heart failure is about four-and-a-half times larger than all cancer combined. When we think about causes of death, and everybody knows about how terrible cancer is, heart failure is *four-and-a-half times larger* than all cancer combined. It's an enormous problem. Today it's treated only with three different classes of drugs, and the drugs lower the body's demand for the heart to pump blood, but do nothing about the actual disease. The treatment that we're developing at Renova is the opposite. It treats the disease directly and can normalize both the heart function and the heart itself over a period of months. It's a *curative* treatment that you give *once*.



Let's follow along with the diagram in the presentation. This little blue thing with the arms sticking out of it is the Adenovirus. Inside you see the DNA of the gene that we use as the treatment. That comes into contact with the heart myocyte (the cells that make up the

heart). It's taken up actively inside the cell, and you can see that in the little sort of gray vesicle, and it goes like a spaceship towards the nucleus of the cell. Then when it gets to the nucleus, it enters the nucleus of the cell where the DNA in that cell is located. But what it does *not* do: it does *not* combine with the DNA in the cell. Because it doesn't combine with the cell's DNA, it cannot produce cancer or mutagenicity. Mutagenicity describes the process of reproduction in which the offspring, the babies, because of a genetic defect are ill-formed. We've all seen children with no hands and that sort of thing, that's mutagenicity. There is a link between mutagenicity and carcinogenicity, or the development of cancer, so this is sort of a continuum that's caused by an interference or problem with the DNA inside of a cell. Therefore, it's very important that this therapy that we use, and the Adenovirus that carries it, does not combine with the DNA in the cell. Because of that you cannot produce mutagenicity nor can you produce cancer, which is very important because these are two things we do not want to produce.

Now I'll give you some background on our company. Renova Therapeutics¹⁴ is a company that I co-founded in 2009. We're about eight years old now. We started with a product for heart failure, which has over forty animal studies that we've conducted published in the finest peer-reviewed journals in the world, all of which demonstrate clearly that a single dose of the gene therapy not only cures heart failure in animal models of heart failure, but it restores life expectancy to normal. It also remodels the heart, and the hearts become normal. Think of this as a person who is sixty-five years old with heart failure getting a single dose and three months later they have the heart of a twenty-year-old. That's what we're talking about. We started out just with the one product, and we were going to develop that product for heart failure; cardiovascular gene therapy.

Of course, life takes you in directions you don't expect, which happened to us. Along the line, one of our scientists was doing an experiment in the lab in an animal model of heart failure with a gene therapy. Our products are given by a single IV injection, so it's like a vaccination, and four weeks later the disease has been cured. Anyway, the scientist was doing an animal experiment of that, and decided on her own for no reason that anybody can explain, to test the animals for fasting blood glucose. This is a test that's normally done for people with diabetes. What she found she reported in the weekly lab meeting. She told her colleagues that the product could not be developed

14. Renova Therapeutics official site: < <http://renovatherapeutics.com/> >



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for heart failure, even though it worked, because it caused fasting blood glucose to go through the floor. The animals were literally fainting because their blood glucose was driven so far down. She said the product couldn't be developed for heart failure because obviously you don't want people with heart failure going around fainting all the time, and other things that are worse. Everybody was very depressed. Then about forty-five minutes later that same scientist looked up at everyone and said, well what about diabetes? The next morning they were in my office and they told me this story and asked, what should we do? I said, it's very simple, set up the animal models that all drugs for diabetes have been tested in and let's compare this gene therapy to a placebo injection in blinded studies. Nobody knows what the animals have gotten and the animals certainly don't know. What happened was they ran a gold standard model of diabetes where the animals have a high-fat diet every day. Over two months, just like adult humans, the animals developed diabetes. Lo and behold, when the animals were treated with the gene therapy, the diabetes was completely reversed. It took about four to six weeks and the animals were cured. They weren't better, they weren't feeling better, *they didn't have diabetes anymore*. Not only did they not have diabetes but they could continue the high-fat diet for the rest of their lives and they were completely normal.

That was the start of it two years ago. Now we've done all three of the major animal models of diabetes, both high-fat diet models and genetically-bred animals that develop human diabetes both Type II and Type I. Each and every animal in each and every study, all blinded and controlled, were cured. This, I don't think I need to tell you, is one of the major discoveries in the history of medicine. I hope I'm not talking out of turn here, but you know there are five hundred million people today that have Type II diabetes, and a billion people are pre-diabetic. These numbers go up 10 % every year. The only treatment for these people today are drugs and insulin. It's a horrible existence, they have to prick their fingers eight times a day to take their blood to measure their glucose, they have to take drugs, and they have to take insulin injections. Even so, over a period of a decade or two, they will develop kidney failure, liver failure, they'll go blind, and they will die from diabetes. We're talking about *a cure for human diabetes*. This is the hand that's been dealt us. People say to me quite often that hear about this thing, how could this happen? It's unbelievable. It's not possible. My best explanation, and I'll be honest with you, is that this is the Hand of God. There's no other way to look at it. I mean how does this happen? I don't know, but it's happened to us and so we're developing it.

The lead product we're developing, which we call RT-100, is the human AC6 gene which is down-regulated in all people with heart failure. My colleague Dr. Kirk Hammond, who is a professor of cardiology and medicine at the University of California San Diego, made this discovery. For all people with heart failure the essential problem is that there is a gene inside the heart muscle cells that's down-regulated so the heart can't contract adequately. Dr. Hammond reasoned by restoring that gene in the protein it makes to normal, he could restore heart function to normal. This is exactly what RT-100 does. That product we had a Phase 2 study in patients which was extraordinarily successful. We met with the U.S. Food and Drug Administration (FDA) in what's called an End-of-Phase 2 meeting and they looked at that same data. By the way, it was uniformly safe. The safety results in the gene therapy treated patients were identical to the placebo treated patients. There were no serious adverse events from the gene therapy at all. In fact, to the contrary, I'm going to show you hospitalization and death rates that are hard to believe. In diabetes we have a lead product going into clinical trials with an ex-professor of the University of Helsinki, one of the most decorated diabetologists in the world. He'll start a clinical trial in patients with diabetes at the end of this year. We also have an analog to that which will also go in the clinic. Finally, we have an injectable product for heart failure, with simple IV injections so it can be administered by a nurse. Lastly, we have a peptide that's also going into Phase 3 for acute heart failure, which is immediately life threatening, a product for which we've obtained the rights from Johnson & Johnson.

I've already talked a bit about congestive heart failure but you can look at the presentation for more information. Suffice to say, congestive heart failure is a huge disease problem.

In terms of the RT-100 clinical results, let's go over the morbidity and mortality. This is the most important result from our clinical trial in patients. Morbidity and mortality is hospitalizations and deaths, respectively. These statistics are not subject to interpretation. They are simple head counts, so you can't make a mistake about it. What we saw here, with a one year study period after a single dose, was that the death rate in the gene therapy treated patients due to heart failure was 0.0%, not 2.4%. The 2.4% was the death rate of *all* deaths, and that person who died didn't die from heart failure. Of all forty-two patients that were treated with the gene therapy no one died within a year. If you talk to a cardiologist about this, and say that you were in a meeting and you heard a guy speak and they did a study in people with severe congestive heart failure





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and they gave a single treatment to these patients in a blinded manner, placebo-controlled, and followed them for a year and no one died, the cardiologist would tell you that's impossible; that cannot happen. Congestive heart failure is one of the leading causes of death in the world. Not only that, but of the forty-two patients, four of those patients had Class 4 congestive heart failure at the time they entered the trial, meaning their life expectancy was three to six months, and they are living. Again, this is not possible, but that's what happened. In the placebo group the death rate was 7.1%, which compared to 0.0%, is quite a difference. That's an annual rate. With regard to hospitalization we saw the same thing. In the treated group, the hospitalization rate for heart failure was 9.5%, but the placebo group was four times as large, 28.6%. I think that gives you an idea of why the FDA told us that we could go to Phase 3.

Now concerning diabetes. Diabetes is growing tremendously, and the global cost of diabetes today is almost one billion dollars. The gene that we use, and we own this, is urocortin-2. It was the discovery made in our lab, that this was or appears to be, a cure for diabetes. It has been studied extensively as a protein and it has exactly the same effects. The initial results are published in *JCI Insight*¹⁵. We have our clinical trials commencing at the end of this year or the beginning of 2018.

I think everybody can appreciate that if the diabetes treatment translates into human patients, as the heart failure treatment has, and we're able to report next year that we've "cured" diabetes, there will be pandemonium. Today, there are major pharmaceutical companies who only make insulin, drugs, or both. You might even have heard of one that's not too far away from here, that has a large stake in diabetes. Obviously, those are very important products, but if we have a single IV injection that could be administered by a healthcare professional and then four to six weeks later the patients don't have diabetes, then you have to wonder what people are going to do with drugs and insulin. This is what's going on so we shall see. We obviously are dedicated to this, and the people who work in our company are dedicated to it. Fortunately, we're able to attract

some of the finest minds in the field to work with this because of its potential importance.

In terms of pricing, this is the one last thing I'll mention. We've worked with the RAND Corporation in the U.S., which is the world's leader in pricing and reimbursement of medicines, to come up with a scheme for us to price correctly these medicines we're developing, which are breakthrough medicines. Keep in mind that these products we're developing obviate the need for drugs. The patients that we are going to treat are all on drug therapy, which is very expensive. In diabetes, for example, the average cost per year is about \$15,000 for drugs and insulin. What we plan to do is to price our product at the equivalent level of three years of drug therapy, which the patients will not need, and to allow the third parties (insurance companies and the governments) to pay us over three years. There is no out-of-pocket whatsoever, and at the end of three years they don't have to pay us anymore and the patients don't need drugs. We think this is a very fair approach. We're getting very positive feedback from initial interactions with third parties because there is no out-of-pocket at all and we're not going to ask them to pay us a larger amount upfront because that is a burden for third parties. However, this is not final. We're developing the drugs, we're developing the pricing, but we're thinking about this in a way that makes it affordable for third party payers and affordable for patients. This pricing is at a level that there will be many patients who could afford to pay for it themselves, if they had to. We're really thinking about this.

In the long-run, we believe these products, like diabetes, will be *vaccines*. We've tested them in animals in vaccination protocols where we treat the animals and then give them the high-fat diet, and they never develop diabetes. For example, we are hopeful that after years of being on the market, the safety will be such that these products could be approved as vaccines. We could see teenagers around the world getting one injection and never developing diabetes in their adult lifetime. And, obviously, the price would come down dramatically. Just imagine that. It would be like the polio vaccine, which pretty much wiped out polio. This is the same idea. I'll stop there, I may have gone a few minutes over, but I appreciate the opportunity. Thank you.

15. September 22, 2016. < <http://renovatherapeutics.com/journal-clinical-investigation-insight-publishes-preclinical-results-urocortin-2-gene-transfer-mouse-models-insulin-resistance/> >

PANEL II

Discussion

PIERRE LECOCQ

— Thank you Jack. I think from the silence around the table, I would guess there is much surprise and interrogation, so I will open the floor now to questions and interactions.

ROLANDO MEDEIRAS

— Yes, very quick question. Very interesting and obviously this is growing as we speak. What's the reaction of the health insurance companies to this approach?

DR. JACK REICH

— Very positive. The health insurance companies have been burned with many cases we've all read about in the newspapers. The Gilead Sciences Inc.'s product for Hepatitis C was initially priced at \$134,000 a course. It takes about three months to take all the pills, and they charged the insurance companies \$134,000 at the time. Not over time. When the patients were put on the medicine, the insurance companies felt like they were blindsided and there was a lot of pushback. It ultimately caused that company first to lose a lot of value as a result of what they've done, but then also to lower the price which is now around \$90,000, albeit still quite a bit. The problem is that it is a burden on insurance companies when the patient starts the therapy and they are not set up for that. We certainly did not want to repeat that mistake. The approach we are taking is the antithesis of that. What we're thinking of charging is \$50,000, the equivalent of three years of drug therapy and charged *over time*. Insurance companies will stop paying for the patients' drugs because the patients will no longer need drugs so they'll simply make those payments to us [Renovo] over three years. There's nothing out-of-pocket for them. It fits in their cash flow, etc. and at the end of that period of time they don't owe us anything, and the patient has been cured. It may not be the approach we ultimately take, but I think it's a darn good start and we've gotten very positive feedback anecdotally from executives and others we've talked to. Now, we have some of the world's experts helping us. The RAND Corporation, of course, but also the ex-commissioner of the FDA is a consultant to our company. This individual has also chaired the committee on pricing and reimbursement for Medicare and Medicaid, so he is one of the world's experts in this issue. We'll obviously have similar conversations here in Europe. But if we fit into what's already there, and we don't charge anything extra, and the patients are being cured, I don't see how it gets much better than that. We'll see. We're all in this together.

LUIS BAMEULE

— What you have told us is wonderful; it's a miracle. As you were saying, it's God working through your team, and giving

us a solution to a problem that's so close to us. My mom used to have Type II diabetes.

I think that what's most worrying of your description is what you briefly aimed at. How is this going to be deployed? What's going to happen with all those companies who provide insulin and all those people who have their basic business life models built around treating the symptoms instead of treating the disease itself? How do you see that developing? This is probably like when they discovered penicillin or something like that, but at the same time, it is a much more connected world.

DR. JACK REICH

— This is what the word *revolution* means. This is the hand we were dealt. It would be completely unethical for us not to pursue this because it's needed in the world. The fact that it replaces drugs and other things is sort of not our problem. The big pharmaceutical companies certainly will do lots of different things, some of them unethical, to try delay or prevent us from succeeding. On the other hand, at the time we get into this development there will be at least 700 million people who have the disease, none of whom want to have the disease. So when we publish the results of the first clinical trial, and hopefully are able to demonstrate that we have cured these patients with a single dose, there will be absolute chaos. There will be people lined up from our office in San Diego to the Canadian border.

Before I was a CEO in this business, I was known as a regulatory affairs expert, and I was the Head of Regulatory Affairs in my first company Gensia, and the first gene therapy company, Viagene, we created. I was very well known around the world and gave many speeches and so on, dealt with health authorities all over the world, and registered medical products all over the world. I happened to be at the FDA on the day that the people with HIV/AIDS showed up, and they wanted to get this new medicine that Burroughs Wellcome had called AZT. There was nothing to treat HIV/AIDS at the time, so they demanded the product which was then in clinical trials in development. They took over what's called the Park Lawn Building, the headquarters of the FDA. They took over the building, they climbed up on the portico over the front door and were hanging over there, hanging out the windows (I was there!). Compared to what we're talking about now, that's going to look like a picnic. There's no way in the world that any pharmaceutical company, or all of them, will be able to prevent this because when you have that many tens of millions of people in any country that have a disease, they will be at the headquarters of the European Union or wherever they have to go to demand the treatment

because they don't want to have the disease. That is the only thing I'm sure of. We have an absolute *obligation* to society to see this through, and if it works and it's safe, then it works and it's safe. The fact that some pharmaceutical companies are going to be terribly hurt by this is not something I can do anything about. I certainly cannot hold the medicine back from the people who have the disease because people who were recently selling insulin are going to lose money. I can't do that. The people in my company are going to make this happen. The world will be better for it in our opinion, but, yes, it will upset certain situations. We'll face people trying to hurt us, absolutely. But tell me, should we put it on the shelf?

MSGR. OSVALDO NEVES DE ALMEIDA

— In this question of gene therapy, and I think that all of you already have it in mind, there are huge ethical questions. Specifically, the development of designer genes, or introducing genes not found in nature. This is the same problem as GMOs, but applied to human beings instead of fruits and vegetables. Then, there are two additional points which also seem very important. One is germline gene therapy. Some countries have established a moratorium against germline gene therapy but not all of them. There will certainly be people or countries who will think to do it, perhaps in China or in Korea. Another point to discuss is the manipulation of embryos. For people who believe that life exists from the very conception, this is a problem. Is it possible to have a moratorium agreed by all the companies working on gene therapy? Are there any other solutions to prevent these problems?

DR. JACK REICH

— The products we're developing at Renova are not passed on. They cannot cause mutagenicity or carcinogenicity and we use only naturally occurring human genes. We're not using designer genes or anything that doesn't occur in nature. The genes that we use are simply genes that have been down-regulated in certain patients and cause them to have a disease. Our therapy simply restores the levels of those genes and proteins to normal, that's it. These problems are not associated with the things we're developing in my company.

JORDAN REICH

— I might actually be able to explain that a little better because a lot of genetics is not understood very well. Essentially what's happening in the heart is that the heart has a blueprint, if you will, to make six different proteins. Take one of these proteins, the AC6 as we've been talking about. Your body has the AC6 blueprint, and over time it can degrade, or after a heart attack it can change. When it changes that blueprint changes. Now it doesn't create the exact same protein that it used to. What we're doing is taking the protein before it changed and putting it back into the cell.

MSGR. OSVALDO NEVES DE ALMEIDA

— I understand this. I understand perfectly that your company is not doing this. I am pointing to the broader ethical problems.

DR. JACK REICH

— That's why I listed these things here because it's necessary for a full discussion.

MSGR. OSVALDO NEVES DE ALMEIDA

— My question is once the technology exists, i.e. the temptation of doing something, we will be divided into two types of people: those who will not manipulate it, and those who will. It's not science fiction. In Europe, in assisted fertility businesses there are people already trying to do things like that.

DR. JACK REICH

— Most of the gene therapy companies are trying to develop genes that do not exist in nature. They start out with a gene that does, and then they can manipulate and change the structure through technologies that have been created like CRISPR¹⁶. This allows you to cut and paste new amino acids into a sequence and make a gene that does not exist. Then they want to use that gene as a gene therapy, to treat mostly rare and ultra-rare diseases and cancers. Back to the point I made early in the discussion, the patients that have those diseases are dying. There's a different scale for safety and efficacy in these patients, even with drugs, then there are with drugs to treat otherwise healthy patients. You see it all kind of goes together. First the creation of the human genome, so now we know what the human genes are. Then the idea by some scientists of an offshoot of that to take certain genes and maybe change them or maybe even, for heritable diseases, have them inherited, and then the offspring wouldn't have the rare disease. All of this sort of thing has just exploded along with some of the other things you've talked about.

Why do governments allow this? I can't answer that question. It is ethical or unethical? I can't answer that question either. I have an opinion about it, but my opinion is not worth very much because it's up to the governments and the Church to say, or lead, on what's ethical and what's not ethical. I certainly have my own opinions about it, and you might be able to guess what those are. There's a reason that we're not doing that. But most of the companies in gene therapy *are* doing that.

Likewise, there's an industry of cell therapy companies. What they're doing is pretty much the same thing. They take cells out of the body of a patient and manipulate those cells. They put a gene into those cells and grow it up in a test tube and then inject it back into that same patient thinking they're

16. CRISPR: Clustered Regularly Interspaced Short Palindromic Repeats.

going to cure a disease. I am not aware that any of that has ever worked, nor do I believe it will ever work. There are many problems with cell therapy. One of which is you can't control the rate of growth of the cells. When cells start growing at an increased rate it's called cancer, which is one problem. The other problem is you can't control where the cells go. Companies and people who try to compete with us in cell therapy for heart failure will make up these things and then put a contraption up through the arm or something into the coronary artery into the heart, and then needles come out and inject into the beating heart. That doesn't work, but people try these sorts of things. It's almost like the Middle Ages. I don't think that cell therapy really will work but there's a big effort of cell therapy companies. All this stuff is going on almost uncontrolled in some parts of the world.

I don't know how to do anything about this other than leadership by the Church, and perhaps by the governments to kind of rethink what are we doing here because you're absolutely right. There is the danger of creating human beings that are different than human beings, and that's obviously a very bad idea. That's a real problem that lays over the cell and gene therapy area, but again, it's not something that we [Renova] are, or would ever, engage in. I think that sets us apart as well.

PIERRE LECOQC

— This is a key issue because indeed mankind today has the means to become a Frankenstein. How do we protect humanity from that, I don't know, but Jack is right. We can rely to a certain extent on the value of some of the businesspeople who are working on it, but there is a limitation to that. If governments, churches, and global bodies do not think about the common good in the sense of *Laudato si'* as a matter of fact, and try to impose regulations, mankind *will* pursue the technology.

SERGIO CAVALIERI

— Sorry for the ignorance, but is there an international agency as we have the control of atomic energy from the UN?

DR. JACK REICH

— No there is not. There are agencies in certain countries. In the United States there is something called the RAC¹⁷, which is a committee that comes out of the National Institute of Health. They are not a regulatory body, but they try to pretend to be one. The FDA is the regulator. The RAC reviews clinical trial protocols before they are enacted, and they're supposed to be looking at safety and ethical aspects. They're not the regulators, so the FDA ultimately makes the decisions on safety. Essentially, it's not official. On the

ethical side one could argue that they might not be the best people deciding this given what they are allowing.

There's no international body that I'm aware of. It's not to say that there couldn't be one and obviously, there's a need. The ethical issues are there whether you want to recognize them or you don't want to recognize them. To the extent that society allows people to be treated with something as powerful as a gene therapy that is based on a gene that doesn't exist in nature... you just say those words and you realize that this is not a good idea. The other side would say the people being treated are dying from a rare disease and there's no treatment for them so shouldn't we try something? There's the rub of the matter.

REV. SÉAMUS FINN

— I'm just curious, are there any parallels to be drawn from the debate that the Church, and I think many others are immediately aware of, on the GMO side? In this particular area, it's a very hotly debated subject relative to the U.S. and European differences, as well as in the developing world. I'm wondering if there are any parallels or any learnings from that conversation in your experience.

DR. JACK REICH

— I have not had a direct hand in the GMO issues other than as a spectator. My opinions about making new tomatoes that are resistant to certain blights or things like that is I don't really have a problem with that as a scientist, because I don't think that's going to turn a human into a frog. But I understand that people are afraid of it, and of course, it's the unknown. I think it's a completely different matter when you start treating human patients with genes. I'm OK eating tomatoes that might be a little different, but I'm not OK with taking genes and using them in humans.

REV. SÉAMUS FINN

— I think it's definitely of a different order. I'm wondering in terms of the ethical conversation and the issues that people present if it's somebody that's got an extraordinary disease and they're about to die.

DR. JACK REICH

— Well that's to the positive side. To the negative side, what happens if that person who is dying and you are going to treat with a gene that does not exist in nature, happens to on purpose or not on purpose, have an offspring occur. What happens then? The offspring is obviously going to have that gene, and what's going to happen? Then what's going to happen if the offspring has an offspring? This is the issue to me, which you can't get away from.

EDOUARD HERR, S.J.

— I wanted to ask a very basic question, because I am not a specialist in this field. Could there not be a way of

17. RAC: Recombinant DNA Advisory Committee. Charter: < http://osp.od.nih.gov/sites/default/files/resources/RAC%202015-2017%20Charter_Updated.pdf

regulating this whole important matter? In trying to say we are working on this: what's going wrong in the genes and changes and differences to *transhumanisme* where they tried to push some special lines into human beings. There could be a difference in saying, we try to treat diseases, and on the other side we try to do special things, like altering intelligence and so on. Could there be regulations where we could agree in saying this is a disease, and on the other side we are experimenting with very strange things?

DR. JACK REICH

— I'm not aware that that kind of experimentation has ever been approved by the health authorities. It's not to say that people aren't doing it perhaps in countries outside of the regulation. That's where the problem is. But no health authority that I'm aware of would ever sanction a gene therapy to be used to create an offspring that is smarter or anything, nothing of the kind. They have sanctioned, as we know, hundreds of different diseases clinical trials to be treated with a gene therapy so that's the difference.

MSGR. OSVALDO NEVES DE ALMEIDA

— About the regulations, I think that it is a very difficult matter to achieve good regulations on these issues. My experience in 2008 in the United Nations with the proposal against human reproductive cloning. The Holy See was opposed to that convention because the difference between a reproductive cloning and therapeutic cloning doesn't exist. From a Catholic point of view, an embryo is a human being. Also, you use it for the creation of new therapies. Then there was an agreement to have just a declaration against cloning in general. To achieve that was very difficult because you have to get 192 countries discussing with a lot of pressure, interests, and different points of view, etc. Perhaps it could be easier at the national level, but always you still find pressures from lobbies and other things. I think that the true regulation should come from all the different levels of institutions. The international level, the national level, the physicians, and the companies. In this area each CEO or stakeholders of a company must think about what really, leaving aside the regulations, could exist or could not exist, could be good or could not be good, what really do we think is ethical to do and what is not? I think that you need an informer agreement more than a common way of thinking about this at all the levels.

PIERRE LECOCQ

— If I may add a comment on that, I think it's a broader issue which is the speed of technology, which now is moving at a fantastic speed. Because what we're talking about here is not something that's going to happen in twenty, thirty, or forty years. It's already here; it's tomorrow. And I when I say tomorrow I really mean tomorrow. And then there's the ability of humankind to adjust to it. I've been participating in the

Consumer Electronics Show (CES) in Las Vegas where you see in totally different fields all those technologies revolving around Big Data, users of data, artificial intelligence and so on. One of the leading gurus of CES always organizes a Thursday breakfast for hundreds of people, where he elaborates on what are the main technological trends of the year. It's always very technical, and he presents what's happening. This year was really a shock because this same man, when we had this breakfast in early January, didn't talk about the technology evolution and what we would see in CES. His basic words were, things are moving so fast that now I'm starting to be scared. He used the words *I'm scared*. Technology is moving faster than mankind can even imagine, so what do we do? What do we intend to do with it? And I think on that point it's exactly the same thing. It's happening *now*, it's not happening in twenty or thirty-five years.

Mankind has always gone as far as it could when it has its hands on a new technology so it's going to happen. How we handle that, I don't know, but it's clear that institutions, our government, the Church, even maybe UNIAPAC in a certain sense, we have at least to say something to make it public. Raise those issues so people like Jack apply their own values to the company they are running and question others upon what they are doing. I think there is a role there to play. Another issue which Jack hasn't addressed here although he does in his paper: we see that all these accelerations in technology are coming from private companies, startups, individuals, it's not coming from big universities, government labs, etc. It's coming from private investment and private investors, which on one hand is good but also shows that it's moving extremely fast because one of the characteristics of private investing is that it moves fast. Maybe Jack you can make little bit of a comment on that. Why is private investment at the core of this movement?

DR. JACK REICH

— Well I think the short answer to that is the skills and knowledge necessary in the people who do this sort of product development only comes from experience. You can't learn this stuff in school. You can't read a book and learn this stuff. You have to go out and do it in order to learn it. First of all, there's relatively few of those people. Second of all, they're mostly all working in the biotechnology industry already. The idea that the university could do this is not realistic. The people who work in universities are scientists, and they make scientific discoveries but they really don't know anything about product development and registration, which is the business we're in.

SIGRID MANZ

— To come back to your pricing. I saw the prospective of the market that you try to integrate in the pricing strategy. What about the cost to produce the product?

DR. JACK REICH

— That's a very good question. Like many items, the cost varies depending on the product. With regard to our diabetes treatment, for example, it's expensive to make it because the vector that we use is called an Adeno Associated Virus (AAV) vector. That virus grows very slowly and manufacturing of these gene therapy products is, to an extent, based on how quickly can you grow up the product, grow more of it, and then purify it. Therefore, that product is relatively expensive. You also have to add the years of research that are carried out in order to get a product like that approved, which is also very expensive. Then finally you have to look at the value added. In this case we're talking about all of our products which have a value added that we've not seen before in the pharmaceutical business. We're not ameliorating the symptoms of disease, we're eliminating the disease. The costs are not just of the product. You have to look at the savings of people not going to the hospital and not dying. That's where the real money is. For example, with our first product, people have heart failure. They go to the hospital on average almost twice a year, and when they go to the hospital the visits are often \$200,000 - \$300,000 a visit. Just a visit. As the heart failure gets worse then there are more hospitalizations, and then they die. The cost of death, especially in the ten days leading up to death, are very expensive. You're probably talking about a million dollars a patient today. If we can give them a single treatment and then they stop going to the hospital and they stop dying, what is that worth over the years or decades that they will live? The answer is an *enormous* amount of money. What we're going to charge is nothing like that. When you look at all of it, these are bargains compared to what they're getting today. But we're only one company so I can't speak about the others.

If you look at many of the cancer drugs that are currently on the market, they add somewhere between two and four months of additional life based on clinical trials, that's it, and they are priced at \$300,000-\$350,000 a dose. A dose. For that much. The products we're developing are going to be priced much lower and they restore the normal life expectancy. So now you're talking about an extra ten or twenty years of life at a fraction of the cost. You tell me, is that reasonable or is that not reasonable?

SERGIO CAVALIERI

— Just a simple question, is it patented? Is it only your firm that has the right to sell this?

DR. JACK REICH

— Yes, certainly we have licensed those patents or own them ourselves, otherwise we couldn't start development. Just imagine the value of the patent, which by the way has just issued in the United States for the urocortin-2 gene which appears to be the cure for diabetes, and we own that. Imagine what the value of that is. Imagine if another company could just simply take it. We wouldn't go through this effort without first securing the patent position. It's part of the pharmaceutical business.

ROLANDO MEDEIRAS

— What are the ethical consequences of the development process? What if you miss the cell target? What if you don't use the right gene? What is the process of developing the product and what are the ethical consequences if you miss the target?

DR. JACK REICH

— This is the reason we have health authorities, because they get to regulate this. First of all, you have to get their approval before you can ever do a clinical trial in patients. If they don't think the safety is adequate they will not let you do a clinical trial. In the industrialized world, you need to get permission from the health authorities to do a clinical trial. I'm not talking about places that I can't pronounce and what they're doing. In the civilized world there are health authorities in every country. Here in Europe you have health authorities in every country *and* a European health authority. If you want to do a clinical trial, whatever it is, you have to submit that protocol to the relevant health authority and they have to read it, review it, and say yes you can do the trial. Or they say, no you can't do the trial and here's why. Thank goodness we have that approach, so people can't just run amuck. On the other side, you have to report serious adverse events during the trial and if they're concerning the health authority will stop the clinical trial. There are safeguards in place that prevent that sort of thing.

PIERRE LECOCQ

— I'd like to stress again, and particularly to the Church, that most of these issues are unknown today. I guess the Church, like many of us, doesn't know what's happening so fast and clearly. I think it's very important that we all know what's happening and see what can be done. Because, again, humanity is known to go as far as it can and it will go there. Thank you very much Jack for coming here and for this intervention.





PANEL III

Using Catholic Social Teaching Principles to Promote Mission Alignment in High Performing Ethical Investments

▷ REV. SÉAMUS FINN

To begin, here are the key principles of Catholic Social Teaching (CST):

- **Life and Dignity of the Human Person** (abortion, addictive substances, discrimination, human rights)
- **Call to Family, Community, and Participation/Subsidiarity** (governance structures, political rights)
- **Rights and Responsibilities/Government/Private Property**
- **Universal Destination of Goods and Management of Private Property** (inequality indifference, environmental destruction)
- **Option for the Poor and Vulnerable/Economic Justice** (corporate social responsibility, business practices)
- **Dignity of Work and the Rights of Workers** (labor rights, meaningful wages)
- **Solidarity/Social Justice/Common Good** (access to basic necessities)
- **Care for God's Creation/Sustainability** (environmental protection; climate change; genetic engineering, hazardous waste)

The Catholic theological foundation for Faith Consistent Investing (FCI) can be traced back to the Second Vatican Council in the 1960s convoked by Pope John XXIII. Followed by *Justice in the World*¹⁸, which was a document produced in 1971 by the World Synod of Bishops and dealt with the issue of justice and liberation of the poor and oppressed. Then, a pastoral letter, *Economic Justice for All*¹⁹, promulgated by the United States Conference of Catholic Bishops (USCCB) in 1986 is a major document which was more or less well received, but had different receptions in different regions of the world. It was quite an extensive document, guided by Cardinal Bernardin of Chicago, and was known more for its process than necessarily for how it came to its conclusions. A series of hearings were held all over the country which the Cardinal and his staff personally participated in, and therefore, drew on that to inform what they were going to say about the tradition. Out of that document came a set of

guidelines for Catholic investors. They were the first such set of guidelines, as far as I know, published in 1991 by the USCCB. Lastly, to tie this clearly into the work of the Universal Church, they were founded on previous papal encyclicals that we could all quote, from *Rerum novarum*²⁰ to *Quadragesimo anno*²¹ and on down, but reiterated by Paul VI. Shout-out to Paul VI, this is the fiftieth anniversary of this month of *Populorum progressio*²², the development of peoples encyclical. It's a very important document, but also by John Paul II, Benedict XVI, and Francis. Important for my point of view to show that this is within a continuous line of the teaching over the last fifty years.

Summed up in *Caritas in Veritate*²³

... there is also increasing awareness of the need for greater social responsibility on the part of business... there is nevertheless a growing conviction that business management cannot concern itself only with the interests of the proprietors, but must also assume responsibility for all the other stakeholders who contribute to the life of the business: the workers, the clients, the suppliers of various elements of production, the community of reference.

Next, here is a very quick summary of where we are in terms of coming at this from the investors' perspective. Socially Responsible Investing Guidelines: I've already alluded to the works of the USCCB in 1991, which they updated in 2003. The only other document of note in this was the German Bishops Conference who issued a

18. *Justice in the World*. World Synod of Catholic Bishops. 1971.

< <https://www1.villanova.edu/content/dam/villanova/mission/JusticeInTheWorld1971.pdf> >

19. *Economic Justice for All: Pastoral Letter on Catholic Social Teaching and the U.S. Economy*. United States Catholic Bishops. 1986. < http://www.usccb.org/upload/economic_justice_for_all.pdf >

20. *Rerum novarum* encyclical: < http://w2.vatican.va/content/leo-xiii/en/encyclicals/documents/hf_l-xiii_enc_15051891_rerum-novarum.html >

21. *Quadragesimo anno* encyclical: < http://w2.vatican.va/content/pius-xi/en/encyclicals/documents/hf_p-xi_enc_19310515_quadragesimo-anno.html >

22. *Populorum progressio* encyclical: < http://w2.vatican.va/content/paul-vi/en/encyclicals/documents/hf_p-vi_enc_26031967_populorum >

23. *Pope Benedict XVI, # 40, 2009*



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document in 2015, that reflected substantively the same as the USSCB. There was a document by the French Bishops Conference around 2007 that didn't get a lot of traction. Talks about responsible stewardship reminds people who are investors that they are part owners of a company, if you own shares in a public company. If you are indeed an owner, it comes with ownership responsibilities, and that's the responsible stewardship.

Three strategies I've listed very simply:

- 1 You should do no harm.
- 2 You should actively engage whatever shares that you own. In other words, you should read the documents that the company sends to you, you might go to the annual general meeting, you might write a letter, any of those things.
- 3 Proactively or positively invest.

What does a Faith Consistent Investment Policy consist of? It consists of:

- A- Active ownership and engagement.** I could give you lots of stories about that, but I won't for the sake of our time.
- B- Proactive, positive social impact investing.** That would take a long time to unpack as well, but we had some references to that earlier this morning about impact investing or social impact investing. It's also been in many other forms for those who have invested in microfinance and microcredit and community loan funds and all that.
- C- Exclusionary Guidelines.** Those have probably gotten the most emphasis, but that's where you instruct an asset manager that you don't want to invest in tobacco, you don't want to invest in nuclear arms, you don't want to be invested in companies promoting pornography, etc. there's a long list that people choose from in those exclusionary guidelines.

We don't want to go into what an engagement strategy is, but you exercise responsibility if you have shares in a public company by voting your proxies. Or indirectly participating in different meetings with corporate representatives, Boards of Directors, etc. The exit strategy deserves an added comment at this stage as there have always been a number of exit strategies, which are mostly disinvestment or divestment. There was just a conference at the Vatican at the end of January by the Global Catholic Climate Coalition, that is promoting for the most part, divestment from fossil fuels. They listed two-hundred companies that they felt were endangering the planet because of their engagement in different parts of the fossil fuel industry, and therefore encouraging investors to move those out of their portfolio. Some religious congregations,

some family foundations, some Catholic universities, many institutions have done that. On their website is a list of who has been doing that²⁴. The exit strategy is, I don't feel like I can engage with the management of this company anymore in an honest conversation, therefore I am simply going to exclude it from the portfolio, pretty straightforward.

Why are over the counter derivatives and credit default swaps important? I'm bringing this from my own experience, this is a resolution that we presented to most of the major banks in the United States in 2008. The topic isn't really that important, but we wanted to report on the firm's policy concerning the use of initial and variance margins on all over the counter derivatives trades. I could go to sleep very easily going through a line like that [laughter]. We were concerned about the systemic risk that was being introduced by the lack of transparency in the trading book of major U.S. banks and by our inability to access. This coming from the reality that for us as a particular group of shareholders in this position, was to say, without a financial system that provides access to capital, you know, from Bombay to Beirut, and in all the villages in between, whether it's through their ATM or through a loan, or through a cash transaction, the world does not function. So how, indeed, do the major banking institutions in the financial system contribute to the risk of failure, the risk of collapse (which all of us saw very real in 2008), and how the lack of transparency or accountability could contribute to that. This resolution was filed in 2009, "*Be it resolved that the Board of Directors report to shareholders (at reasonable cost and omitting proprietary information) by December 1, 2010, the firm's policy concerning the use of initial and variance margin (collateral) on all over the counter derivatives trades and its procedures to ensure that the collateral is maintained in segregated accounts and is not rehypothecated.*"

I was reading the *Financial Times* the other day, it said the Financial Stability Board (FSB) today published a consultation document on *Proposed governance arrangements for the unique transaction identifier (UTI)*. This is exactly what our resolution was about, and it only took them nine years to get to it [laughter]. You may think that the Church works slowly sometimes, and other events transpire. This is an example, it seems to me, of where the voice of the Church and the moral voice of communities needs continually to raise these kinds of questions, from the base. Our concern in much of this was, we understood that a lot of people in the

24. < <https://gofossilfree.org/> >



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United States were impacted severely by the financial crisis, in term of their mortgages, pensions and savings, but we were also concerned about the many millions at the periphery who were severely damaged by the irresponsible behavior that was going on at the center.

The evolving corporate story, I think is fundamentally: what is the social purpose of the corporation? We're not going to go into this but we know obviously that one of the purposes of the corporation was to supplement the inability of the State at some points to raise capital for projects or for initiatives. I think it's a fair question to ask for any corporation, public or otherwise. What are we contributing to society? What are we contributing in terms of development? What are we doing in terms of building up the common good? I quoted here, Larry Fink the CEO of BlackRock, in his February letter to investors, "Every CEO should lay out for shareholders each year a strategic framework for long-term value creation." Or, as Klaus Schwab the Executive Chairman of World Economic Forum says, "*Capitalism in its current form no longer fits the world around us.*" This conclusion is now broadly shared by business leaders and investors, policy-makers and academics.

Here is another quote, this one from Paul Druckman, *I am in awe of what capitalism has achieved over the last century – the innovation it has inspired, the lifting of nations out of poverty and the absolute level of economic growth that has been generated. I find it astounding that U.S. GDP alone has increased six-fold in a generation. Yet we must confront the problem that wealth today is not broadly shared, inequality within nations is rising and as the International Monetary Fund has said, this growing inequality is acting as a drag on economic growth.*

Those words could have been spoken by Pope Francis. I would argue that in many instances, in some of his more off-the-cuff interviews with the media or in his different speeches, has said exactly that. It's not simply coming from the business community.

You can read the slide on Tom Wilson on your own. He's the Vice Chairman of the U.S. Chamber of Commerce, and the Chief Executive Officer of Allstate basically says the same thing.

The more important points I want to make is that I think there is a 'Potential, Eclipse, Convergence or Opportunity for Catholic Social Teaching.' I want to tie it to the Sustainable Development Goals and to other benchmarks. As a Catholic community and as

an ecumenical community and as a faith community, Catholic Social Teaching Principles are well-known and quoted. Patriarch Bartholomew refers to them often, Archbishop Justin Welby refers to them often, as well as numerous other religious leaders. We know what they are, and we can rattle them off almost as well as we can do the Ten Commandments if we were challenged. But what is the next step in terms of how we actually take them, how we apply them, and operationalize them? If we're not successful in that step I want to suggest that some things like the Sustainable Development Goals (SDGs) and other benchmarks are just going to leap right over. The motivation may not be the same, but when you look at the SDGs right now there are seventeen of them, 169 targets, and at the last, there were 231 indicators. Matrices have been developed by which a country, company, or investor can actually go and look at, for example, how are you doing in terms of reclamation of a particular lake or river, relationship with a local community, the product you're making, etc.

It seems to me that we have two choices, as I see it. With the tsunami of Big Data and Digital Data as a challenge to the Church and to the business community, can that be enhanced to help us with better mission alignment opportunities for the Church, Church Institutions and for Catholics in general? Take the SDGs and look at them. To illustrate this point, we were in Colombia two weeks ago visiting coal mines. The first presentation was at 8AM from the Corporate Social Responsibility (CSR) Director of one the largest open-pit coal mines in the world. At slide fifty-two he says, "*These next six slides are on the SDGs and how the SDGs are informing our behavior and goals as a company. You can come back in twelve or eighteen months and we'll tell you how we did.*" What they like about the SDGs is that they're precise. They didn't take all seventeen. They took the five that they felt were connected best with their particular industry sector.

There's a question, I think, about can Catholic Social Teaching Principles contribute and benefit from the SDG project? Or, can we indeed develop a parallel set of benchmarks and matrices that would help us going forward? I think the same thing might be said in the question at the bottom, "*Can the UNIAPAC Foundation and the Network engage these opportunities?*" in a way that's supportive of the Catholic Social Teaching and of the leadership of Pope Francis, in any one of these areas. I don't want to go on because I think I've taken about twenty minutes, so I think we'll move onto the discussion.

PANEL III

Discussion

JOSÉ IGNACIO MARISCAL

— Séamus, you have a nice voice and a good way of presenting things. As an investor, I'm going to speak on my own experience. It's such a difficult issue especially when they come with, as you say, derivatives that the people who are selling don't actually understand what it is they're selling. That's an issue that we have to be very much aware of as investors. When someone cannot explain what they're selling, it's very dangerous.

REV. SÉAMUS FINN

— You and Warren Buffet agree on that I think [laughter].

JOSÉ IGNACIO MARISCAL

— The other issue that I think is very essential to what we are talking about is something we work very hard on in our companies. We always say that we have to be “*highly productive and purely humane*.” The way to measure *purely humane* is very complicated, but I think it's the essential aspect of the dignity of man. That's what we can really work on in our companies; in order to be a different company is to work on dignity of the human man. Of course, right now those things are not measured in any way. The only system is to go and look at it, to talk about it, and to ask questions to the management.

You said something else that's very important, which is that you have to be an *active* investor. This may not fit very well with the goals of companies, but I think it's very important to be an active investor so as to ask the important questions about Christian Social Thought, of subsidiarity, of common good and solidarity, and of the respect for human dignity. I really believe that investors must understand where and how they are investing, and to be active in those investments. And, of course, in our companies that is our prime responsibility. Now I open the floor.

RICHARD TURNBILL

— Thank you Séamus, thank you very much.

Just a little bit of context: for the last twenty years I've been a Director of the Church of England's investment funds. The Church of England's investment funds are £1.5 billion. That's not the total sum which the Church of England owns, but it is the total sum within our funds that we manage. For the last ten years, I've been the Chairman of the Audit Committee of those funds. I think it would be interesting, if you'll permit me just a couple of minutes, to reflect on the similarities and differences from that setting. The good news is that almost everything that Séamus said would resonate precisely with what we discuss, what we think

about, and what we debate including the principles of social teaching I'll come back to that in a moment or two because there may be a terminology question. In terms of the principles you went through, absolutely everything would resonate with the way in which we think and approach our investment responsibilities so that's really good news.

I did reflect upon a couple of things. Firstly, the difference between being an *active* investor and being an *activist* investor. I think, certainly in the setting I am in, there's been some resistance, which I would go along with, that the key to a holistic social approach to investment is to be an active investor, but not necessarily an activist. In other words, we don't have to fight every single battle, that we may agree with or we may not do, in order to have influence. We will have the most influence upon companies that we invest in by being active. We may cause resentment if we simply become campaigning activists. So that would be one distinction.

The other distinction, which might be more controversial is the distinction between wealth and its accumulation and inequality. I'm no more in favor of extreme inequalities than anyone else around this table but I do wonder sometimes if we've become over-concerned by the inequality question. There is nothing intrinsically wrong with inequality, there may be something wrong with extreme inequality. It's a point of emphasis rather than anything else.

The things that come up in my area which haven't been mentioned, but I suspect would also come up with yours. What are the actual issues that come out: remuneration and compensation issues. Corporate compensation and corporate remuneration are issues that come up all the time, and I don't think it's about the quantum. It's not about whether the CEO is paid one million euros or two million euros, it's about the short-term decision-making that determines that reward. The average length of term of a CEO is three years to three-and-a-half years, so the temptation to make short-term decisions for the executive incentive plan is very strong. We need to find some way of encouraging a longer-term perspective and perhaps reward with deferred consideration and a reward that ties to some degree on the longer-term generation of value. Environmental is another issue. Employment policies are another issue, not just are we a good employer, but how we go about employing our people.

A very big company in the UK has gotten some bad publicity recently because it was discovered that all of its employees were on what are known as *zero-hours contracts*. Zero-hours contracts have no permanent guarantees at all. I don't think it's wrong for a zero-hours contract to exist, but if you are a major retail business and *all* of your employees are on those

temporary arrangements, is that good modeling? Supply chains, which would be common and governance and so on. Last thing I want to say, conscious that we need to hear lots of different voices, is one thing at the end. I was just trying to think through, Séamus, was a lot of what you say and a lot of the terminology that would be used in Catholic Social Teaching and Catholic Social Thought I agree with entirely. But certainly, where I come from it wouldn't resonate, not because of content, but because of terminology. So I wonder if we might be encouraged to use terms like Christian Social Teaching, Christian Moral Teaching, and Christian Economic Teaching. The content may be precisely the same, but the more that we can talk about Christian Social Teaching, Christian Moral Teaching and Christian Economic Teaching then we might end up back where I started, that actually everything you said resonated absolutely with the areas where I have some responsibility. Sorry for taking so long, but I hope that brought perspective from a slightly different place into this really helpful discussion. Thank you.

EDOUARD HERR, S.J.

— I have been asked several times about the justification of private property. The views from Pope John Paul II and onward on the justification of private property was always to say that private property is a legitimate right, a human right, and a natural right, but beneath that is the universal destination of goods. So long as private property is a good way for all people to respect the universal destination of goods and can live in dignity, private property is good. But if not, then what? I have been asked this several times by people during and after the financial crisis from 2007 onwards. People ask me, with everything that has happened with the financial crisis and the disputes on the behaviors of banks and financial funds, if I can still say that it is in favor of the property of all? Especially arguing about what you know about these financial products and derivatives. People say they were told that this was done in order to help the poor get property, and then when there was a reversal of the financial growth, they were all put out. I was taken off to the side several times by people telling me property for all could no longer be justified. The Church says we agree that property remains, and I think this is a very important teaching of the Church from the beginning, if you remember Léon XIII and so on. But, the people say, so we agree with that but now tell us what happened in 2008 and the huge growth in inequality?

I think inequality will always be there, and there are justified inequalities, of course. John Rawls taught that and I agree with him. What has happened in the U.S. and also in European countries is a growing disparity between the poor and the wealthy. I think this is a matter of reflection. However, can private property still be justified on both sides? On one side are private individuals and on the other are

financial capitalism funds that are largely owned by national and multinational corporations who are mainly interested in dividends. Can the justification of private property still be argued in these times post-crisis, from 2007 to now?

MSGR. OSVALDO NEVES DE ALMEIDA

— I would like to say first; the Church has never defended that type of private property. That is the definition of manipulation. That is not exactly a private property, but a way of taking the property of others. When the Church defends private property, it's looking mainly for families. The Church defends the private property of the nuclear family that is a defense or protection of liberty, the freedom of people, and of the personal, integral development of people. We should not confound one word with two different meanings.

EDOUARD HERR, S.J.

— I agree.

MSGR. OSVALDO NEVES DE ALMEIDA

— You can find both meanings in the teachings of Pope John Paul II, Pope Benedict and this present Holy Father, Pope Francis. There is a consistent continuity on this subject which you can see by going back to *Rerum novarum* or to *Quadragesimo anno*. I think that what is important to bear in mind always is that first, the private property which the Church protects or promotes is the private property of the nuclear family, and depends on the ability of the nuclear family to have an independence from the government and the possibility of a personal, integral development. I think other kinds of private property could and should be discussed case-by-case in order to see if it fits with the principle of personal, integral development of people and of families.

Going back to the United Nations' Sustainable Development Goals and the 2030 agenda²⁵, this is a huge document that was written and in some way assumed by all countries in September 2015. The Holy Father gave a strong endorsement to, let's say 157, goals that could be shared by the Church. There are two specific goals relating what they call *sexual rights* and *reproductive rights* that are not admissible by the Church as such. The problem with these kinds of documents is that as they are adopted by consensus by the countries, everybody wants to put something there. Take, for example, the developing countries, especially African and Asian countries, who are mainly concerned with trade and with financing. If these countries manage to open the door in some way for pretensions in the subjects of trade and financing they will allow the European Union and the Scandinavian countries push the other points. So it's impossible to have a good document. But in its whole, what

25. *Transforming Our World. The 2030 Agenda for Sustainable Development. United Nations. September 25, 2015.* < http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E >

the Holy Father has said, it's a sign of hope for humanity and 157 goals are acceptable for us. These other goals relating to the family and the sanctity of life that could not be accepted. In all, these Sustainable Development Goals are just goals. Each country will have to find its own way to reach the goals, no one says anything about how exactly to reach the goals. The point being, when speaking about impact investment keep the 177 goals in mind but try to understand if those investments are truly conducive to achieving those goals or not.

RODRIGO WHITELAW

— My only comment is concerning the Sustainable Development Goals and the engagement of UNIAPAC. We already work with Caritas Internationalis and the International Labor Organization in Goal #8, *Decent Work and Economic Growth*. Since four years ago we continue to come to a Working Group on this issue.

JOSÉ IGNACIO MARISCAL

— I want to mention something on the universal destination of goods and services, Father. I see it in another way. I think it's very complicated to understand that all the goods and services are for everybody, and everybody has access, so I use a personal way of seeing. Each one of us receives from the previous generation culture, education, goods and services. But, each one of us is responsible for what we receive, and then you become focused on what you have to do with those things that you receive: to increase them, to develop them, to correct them, and to have the integral development of yourself. That's what really makes the world go round. If every one of us sees it that way, it's completely different from *everything* is for *everybody*. Everyone has the responsibility of what he or she is receiving. It doesn't matter where you are, and you cannot complain that someone else has received more, because that's their problem. You have what you received and you have to develop it, to increase it, and then pass it to the next generation. That's part of this whole process which goes on and on and that's what really makes the world go round. If we understand this concept, I think it's a very valuable way of seeing the universal destination of goods and services because it's a personal thing and not a general thing. I just wanted to say that.

REV. SÉAMUS FINN

— Can I add just a quick comment? We were not going to get into the deep hole of private property and the universal destination of the goods of the Earth, but I have two quick comments. I had a couple of chats with Cardinal Pell in recent days and he has said a number of times in the last two years that he wants to slavery-proof the Vatican, in public. He wants human trafficking out of the supply chain of the Vatican. Now that's an easy goal and that's one that's

written into all of these principles and I'm sure all of you would assent to, and I think one that he should be supported in, that's going to take time. I think that's important to be that basic and that specific on some of these efforts as we move forward. We are working on a project at the Vatican Bank on Catholic Ethical Investment Guidelines, that would at some point go forward I presume to scrutiny by people better versed in this than I am, but that would indeed try to introduce these policies and guidelines into the way the Vatican manages its assets. That's not even getting to the whole question of transparency and accountability with the IOR and the Vatican accounts.

I want to point out one other thing. I got an invitation yesterday in an email. You all know what MSCI is? Morgan Stanley All-Country Index. They said they wanted to create a Catholic Thought Council. They invited seven of us to participate in a conversation to see what are the emerging trends in Catholic investment, and where will they be in twenty years. Now MSCI follows no faith that I'm aware of, but it is a secular purveyor or provider of data, analyzer of data, and advisor to all sorts of folks out there, and yet they're feeling the need to bring together seven Catholics from around the world to have a conversation about where they think the sentiment of Catholic investors will be in twenty years, and how they might get ahead of that curve. It seems to me this is why I had that 'potential eclipse?'. I think we have to be *that* granular in some of the proposals we make going forward in order to help the Church, and to help each other, to actually grapple with some of these issues.

LORD BRIAN GRIFFITHS

— I hadn't intended saying anything in relation to this conversation, and I agree in principle with almost everything that Séamus has said, but if I can for a minute give you my view as a banker. In Goldman Sachs I sit on the Board of Goldman Sachs International, we have a balance sheet of just under one trillion dollars, and Chair of the Audit Committee which covers audit but also covers compliance and the whole regulatory side and also the Risk Committee which covers market risk, credit risk, liquidity risk, regulatory risk, operational risk and so on. That's a broker-dealer. I also sit on the Board of Goldman Sachs International Bank where I chair the same committees, but that are for the Bank.

The first thing is, I can imagine that particularly somebody who is not associated with the world of trading and so on, when hearing the word *speculation*, which is used in a very broad sense, they throw up their hands in horror and say, those are those greedy people again. But assuming I'm managing a portfolio of equities for, for example a trade union or for a pension fund, and I'm holding a particular stock of a company and I know that the Board of Directors of that company have not been prepared to sort out the Chief

Executive and the Management and I say to myself, this company under this leadership is not sustainable so I'm going to short this stock. I'm shorting this stock, to do two things: One, to force the company to actually take action. Secondly, to make sure the people I'm responsible to doing the investing for are actually being looked after. The world of derivatives is a complicated world, but if you go into any grocery store in this country or in any European country, or in the U.S., when you buy coffee or tea, the people supplying all of that are using derivatives in order to run their business. If you take out car insurance, house insurance, whatever kind of insurance you take out, the people running those companies are actively using derivatives in order to manage their business. If you get on a plane, the airline companies in the market for jet fuel are actively using derivative markets in order to reduce their costs and run their business. It's a big issue, but I want to argue that banks within the present system are actually playing an important role in the maintenance of prosperity and in the future of prosperity. Earlier today we saw the potential of gardens and parks and then we saw the potential of gene therapy. These are innovative industries, who finances them? Private equity or the banks. One could make a much bigger argument than that.

The second thing is, within the large seventeen internationally systemic international banks, of which we are one, I don't know how much people appreciate how much has changed since the financial crisis. If you look at the ten years up to 2008, everything was going up and up. If you look at what has happened since, there's been a fundamental revision of governance. In 2010 I wrote what was effectively a book of how Goldman Sachs should be governed in London. It was all accepted. The role of independents in banks today, we have much stronger Boards that never existed before 2008. We have capital and liquidity requirements which are hugely different from that time. We have structural compensation which disincentivizes short-term rewards for short-term decision-making. We have recovery and resolution policies. All of these banks have to produce plans on what would happen if you had a huge shock to your balance sheet because of a scandal or because of something maybe just peculiar to your particular bank. As a result of all of this, today it's very hard to make more than about 10 % or 11 % as a return on equity in a bank. Indeed, if you take a lot of large banks, they're not covering their cost of capital. The cost of capital is way above what they are actually making as a return on equity.

In addition to that, the effort that I think every bank I know, certainly the one I'm involved with, in terms of trying to influence culture, whether it's tone at the top or whether it's the permafrost, does the tone at the top really infiltrate the permafrost whether it's in terms of training, etc. it's a complete sea-change as is the amount of supervision. We have a regime in Britain called the Senior Managers Regime.

Every senior manager to be appointed has to be approved by our regulatory agencies. They have to be interviewed from the Chairman to the Executive responsible for X, Y, and Z. The supervisors, I would say we have a dialogue with them that means either we are in their place or they are in our place virtually every day of every week. This is completely different from the world before 2008. I don't want to go over the top in saying it but if I can just make a statement, I believe what I'm trying to do in Goldman, and what I've been trying to do for the last eight years or so, is actually to live out Catholic Social Teaching. I think in terms of understanding the markets, I would say there are endless bankers I know who are Catholic, who are trying to do exactly the same and yet you do feel that when you get together with other Christians, and I'm not attacking Séamus at all, but you just feel you are a leper coming from a leper colony into a purely healthy environment and somehow, you're tainted. If you're from Goldman Sachs it's about ten times worse.

REV. SÉAMUS FINN

— I do want the record to state that I do agree with you on speculation and derivatives and I didn't impugn the use of those. I said transparency and accountability about derivatives and I obviously know the CEO of Goldman Sachs quite well so I'm well-acquainted with what you speak of and it's accurate. Just so I'm clear, I have no problem with speculation or derivatives.

EDOUARD HERR, S.J.

— I must say the question came from me. Because I am a teacher in social doctrine of the Church and these questions are raised if you go to a Parish or if you go to people. So, it's a question I pose because we are here in a very distinguished society. But other people suffer a lot and they ask questions. I think they are entitled, and I don't try to say all the bankers and all the financials trusts are thieves [laughter]. We are in charge of the unity of the Church, that's our main objective. We have to take care of the whole flock of people to bring unity, so that's the explanation. I have a few other questions in the same direction.

LORD BRIAN GRIFFITHS

— Can I just say, I completely agree with you. I think if there's one thing that banking needs it's greater transparency. I think the regulatory structure is now being built up but there could be greater transparency. For example, what exactly is a risk-weighted asset? It's a sovereign bond of the government of Italy, an asset which carries virtually no risk. I think the public have got every right to ask. These banks, including my own, have been fined in total over \$300 billion, well they must have done something wrong. I have no problem with that and therefore when you get a scandal it hits the press, and the public have every right to say whatever is happening here.



PANEL III ▷ DISCUSSION

And I'm not defending that, all I'm saying is, and I think that Séamus agrees, that we just have to have a balanced picture that's all.

EDOUARD HERR, S.J.

— I agree and I have nothing more to say.

MSGR. OSVALDO NEVES DE ALMEIDA

— Just one information for you, the Holy See has prepared a long note on the Sustainable Development Goals showing,

in order to help people to understand, what is acceptable and what is not. It's a very balanced note and for the first time we've managed to convince the General Secretary of the United Nations to publish the note as an official document of the 72nd General Assembly. If you want I can give you the links. It's mainly about the dignity of family and life because those are the weak points of the Sustainable Development Goals.

JOSÉ IGNACIO MARISCAL

— Please do send them to us. Thank you very much.





PANEL IV

Nutrition Facts of Faith-Based Investing : Leveraging Data Science to Confirm Compliance, Prudence and Congruency

► BRUCE CAHAN

Thank you for letting us do this from outside of Stanford's Business School. Thank you to Rodrigo Whitelaw and to Pierre Lecocq and to my friend Father Séamus Finn who is there with you. Let's go over some nutrition facts that I hope will help you in your deliberations.

As you can see, I am an adjunct professor here at Stanford in the School of Engineering. My history is that I have been a banker and a finance lawyer as well as a geospatial technology finance advisor to the government and as well as a 9/11 responder.

As you can imagine, my range is very wide. I teach three courses here at Stanford: *Sustainable Banking*, *Ethics of Finance and Financial Engineering*, and *Investing on the Buy Side of Wall Street*. We're standing up two new courses: *Hacking for Urban Resiliency* and *Let's Build a Better Bank*. My research ranges from building a periodic table of quality of life elements to how are we going to bank in space, to the conversations that look at Vatican finance. Aside from my work here at Stanford, I'm creating a teaching hospital bank called GoodBank™.

I notice that you met with someone very, very special and important, the Pope, in November. You made some declarations in Rome that relate to issues that we care very much about in finance. You talked about inclusion and inclusive economies, you talked about breaking the chains of poverty, entrepreneurship and innovation. I brought you outside of the business school so you could start to see how the days begin here in Silicon Valley when people come up with new ideas here. I asked myself, how will UNIAPAC and its members measure if you've achieved the goals that you've set for yourselves in Rome.

Benchmarks can be a catalyst for change and the data exists. Your corporations, to the extent that you are CEOs or executives of corporations, have the data to monitor and reward ethical conduct. I note that in the news today, Citibank has hired someone to be their conscience. Sustainable accounting standards are emerging. There is a sustainable accounting standards board and there are some other standards that are promoted. Bankers are starting to pay attention and

to the extent that there are bankers in the room, or former bankers, how are you going to join in UNIAPAC's commitment that you made in Rome. And investors and managers of wealth for the next generation are paying attention. You've made your commitment, you've signed up for the mission. When you looked out from Rome, how do you promote your impacts? How do you scale the commitment that you made there?

An outline for us is to talk about the role of nutrition facts labels and how that's taught manufacturers new ways to make their products and to account for their supply chains. Then, to talk about corporations needing these ethical nutrition facts to guide their market presence as well as how the financial markets perceive the companies. Looking a little at the massive disruptions that are providing opportunities for transformation. Then getting into the work that Séamus and I have done to look at what is the way that Vatican finance and the principles of Catholic Social Teaching can be used in banking.

Nutrition facts do help us live and eat healthy and they tell us, in terms of calorie content, what we are putting in our bodies, but they miss certain elements that would be important to understand the journey of our food. Environmental justice, what were the chemicals and pesticides and preservatives? What was the human dignity content of our food, the fair labor practices, the supply chain, where was the grown and stored and processed and at what transportation and energy footprint, what are the scarce resources that were used, the water and the energy used to grow this food? Then the social responsibility. Were the workers who feed us housed, and their families educated in a responsible way? We've carried this same kind of thinking in our industrial age over to consumer appliances and to our transportation to our cars and we set these targets in these labels for what we want to achieve. We improve over time, we reduce the amount of carbon footprint and increase the mileage of our cars, we reduce the energy load of our consumer electronics. We also change those products so that their impacts on the world promote values that we cherish.

PANEL IV > NUTRITION FACTS OF FAITH-BASED INVESTING: LEVERAGING DATA SCIENCE TO CONFIRM COMPLIANCE, PRUDENCE AND CONGRUENCY

Nutrition facts labels change us to be healthier, and to think about ourselves and how we function as human beings. Incredibly, to my way of thinking, finance has no nutrition facts labels. That makes it really hard to have a target for the impacts that you create with finance. Without nutrition facts labeling you have wild swings in what gets funded at what interest rate and with what demanded minimum investment yield. Investors don't necessarily know year-to-year where to invest. Businesses find it hard to have a reliable source of financing from banks and institutional sources, and consumer debts pile up without a way to resolve them. The impacts have no context for our financing. We don't know what the trillion dollars of financing does day-to-day, and with the increasing complexity of our lives and our world. The goaltending that occurs with machine learning is very, very manipulative to say the least, and I've shared with Rodrigo and UNIAPAC a recent article²⁶ that I wrote on that.

So year-to-year, and this is a twenty-year window, what investors are seeking in terms of investments that are responsible differ. There's no consistency, necessarily, to what they want to fund, what kind of companies, what those companies should be doing, and how they should impact the world. I don't see much consistency in this kaleidoscope of performance and their pricing of investments. We also know that your industries, to the extent that you're managing companies, are being disrupted. This is a slice of what that disruption looks like across all the industries. Along the horizontal axis, you see the degree of investment in technology. On the vertical axis, you see the variability of revenues. For instance, banking has had very stable revenues over time, not recently, but over time. Therefore they've invested very little, aggressively, in technology. Now that's changing to catch up with their clients who are computer, software, or medical device companies, or pharmaceutical companies all of whom are up in this top-right quadrant, who have high variability in revenues

and also invest a lot in technology. Those investments in technology are giving you new opportunities for tracking impacts. Whether you're in the supply chain issues or in the human resource issues, we're going to be doing that.

I wanted to share that all that transformation is really happening across six forms of capital. This comes from the integrated reporting framework in London. Six forms of capital they posit are: financial capital, manufactured capital, intellectual capital, human capital, social and relationship and trust capital, and natural resources capital. Those six forms of capital go into your enterprises, or the companies you invest in, are transformed and come out the other end. What Father Séamus and I are talking about is that process, and how those impacts occur.

With the internet of things, with every device having a presence on the web, you're going to have the opportunity to track impacts at a highly granular, highly location-specific and time-specific manner. The question is, will that data be useful or used in banking and finance and investment, to an insurance, to reward healthy choices? Finance needs its nutrition facts labels that use these new sources of impacts data.

As you can see, sustainable banking, which is what I call my efforts here in Silicon Valley, I attract some unlikely allies. I've had the great honor and privilege to meet the Pope as well. I had a moment, courtesy of Cardinal Peter Turkson and others, to present the Pontiff with a seedling from our Redwood Forest which grows to live one thousand years and say that we need banking and financial gatekeepers that help us make decisions that last as long and stand as tall as this Redwood.

Data do speak for the poor. If you want inclusion you better listen to data that tell you who is poor and what you can do about it. What would a nutrition facts label for Catholic fund managers or Catholic CEOs of operating businesses look like? What elements would you put into it?

Finance without Nutrition Facts

Problem	Investors	Businesses	Government	Citizens
Swings in Funding Fads, Interest Rates & Investment Yields	When & where to invest?	Harder to fund responsible business / agile product change	Banking, finance & pension systems collapse	Consumer debt drives or limits spending & saving, GDP
Impacts without Context	Benchmarking industry impacts is hard	Good corporate behavior lacks financial incentives	Pays for negative impacts' externalities	Suffer Poverty, Pollution, Inequity, Job Insecurity
Complexity increasing, without Purpose	Goal-tending by computer machine algorithms is myopic, risky	Can't tell business' story to computer algorithms	Overlapping reporting & regulatory processes	"Take it or leave it" consumer debt access is increasing poverty globally

26. *The Algorithmists' Dilemma: Finding the Courage to Imbue Human Hearts in Digital Brains.* The Solutions Journal. March 2017. < <https://www.thesolutionsjournal.com/article/algorithmists-dilemma-finding-courage-imbue-human-hearts-digital-brains/> >



PANEL IV ▷ NUTRITION FACTS OF FAITH-BASED INVESTING: LEVERAGING DATA SCIENCE TO CONFIRM COMPLIANCE, PRUDENCE AND CONGRUENCY

Through wonderful conversations with Father Séamus and our friendship, we looked at that as three quadrants:

- 1 How **compliant** with the law you are or those funds are.
- 2 The **prudence** with which you manage those funds.
- 3 The **congruency** between the impacts that the funds achieve and Catholic Social Teaching.

In terms of compliance, can we upgrade Catholic funds management practices internationally to be in accordance with legal and accounting standards? Can we proactively assist fund managers or institutions to get themselves up to that standard and build a list of Compliance Risks focus areas that Catholic institutions face and should look to manage?

In terms of prudence, can we tag the assets and their funds' flows with the real world impact so as to react to economic, environmental, health, social and other factors that affect the market valuation of the portfolios that you're invested in, or in the businesses that you're engaged in? Let's take the long view of industry transformation, not year-to-year that the market does, and put our compass setting at an intersection for social responsibility to identify transformation leadership and to become transformative leaders. Then to use that internet of things and other sources of Big Data to forecast trends. I'm not sure if you have heard about *smart contracts*. If you're in the insurance business, if you're in the equipment leasing business, smart contracts are written in code, perhaps on the block chain. You're going to have a lot of data on those smart contracts that could help forecast the value of the assets and the value of the businesses.

Finally, and we think most importantly, congruency. Assure that the financial practices and impacts of Catholic institutions align with the faith teachings to serve as an exemplar for other managers of funds but also other religions. Invite Catholic bankers, investors, managers, etc. to pioneer the means to benchmark congruency, and what diverges from Catholic Social Teaching. Know when the compass is set to North, and when you're heading South. Create the financial incentives inside of these institutions, specifically banks, and manage investment funds, sovereign wealth funds, etc. to see that congruency. To make this all very real today, I thought well, what are our targets? By 2020, by 2025, by 2050 when could we say that 99 % of all the funds are legally compliant, and that we know that. That from a prudence point of view, the funds are managed, to at least 51 % of the time, earn a comparable rate of return. Comparable to other funds in the same asset class. Then, at least 25 % of however the funds

are invested, are known to be congruent with Catholic Social Teaching. I'm not suggesting what the targets should be, but as I've shown you with nutrition facts labels for cars and others, having the target matters in terms of achieving it. I call this storytelling money. Creating a story that the money means something to you, to pay attention to that.

Why do I focus on banking and finance? Because when you look at the global GDP, banks and investors account for 88%, the large blue slice, of the global economy. Impact investing, even on its best day, can only achieve a fraction of the impacts that that very big blue slice is achieving, and cannot resolve or mitigate the impacts that are achieved by the majority of how funds are invested. Therefore, we really need to pay attention to the mainstream finance and investment processes.

I know this is not unusual for you, but bankers are not normal personalities. If you run a business and you've applied for a loan and the person on the other side of the conversation doesn't seem to understand you, that's because they don't look like, and they aren't like, you. Banker personalities are typically conservative, typically risk-averse. Entrepreneurs are risk-takers with experience for what risks pay off. There's a mismatch, and the bankers need this augmented data of impacts to, in effect, do some personality shifting for good. As Bill Gates has said, "Banking is necessary. Banks are not."

These are some of the things that I look at here at Stanford, this a slide showing you five slices of U.S. households. The bottom 20 % of Americans owe 25 % more than they have in net worth (the red). The second poorest households owe 80 % of their net worth in debt. The middle owe 50 % of their net worth in debt. The second from the top owe about 25 % of their net worth in debt. This is not a picture that we can use, that we should want to use: FinTech (financial technologies) to create more consumer debt that people can't repay. Intergenerationally, this is a very troubling picture for us and I think the same in France and throughout Europe.

We need to reduce the unbanked and underbanked who don't even trust a bank or use a bank or are pushed away from banks. These are U.S. statistics and it may be surprising to you how many people (up to 30 %) in certain parts of our country to not use a bank, and rely on alternative finance such as payday lending that creates a cycle of debt. FICO, which is our consumer credit scoring standard, ignores their human stories. Inequality is really worsening in our countries. Certainly, President Trump's budget which was recently announced will make that a certainty. We've seen such a large share of the net income going to the top wage earners, that we should worry.



PANEL IV ▷ NUTRITION FACTS OF FAITH-BASED INVESTING : LEVERAGING DATA SCIENCE TO CONFIRM COMPLIANCE, PRUDENCE AND CONGRUENCY

The U.S., like Europe, is the land of immigrants. Where the immigrants have come from brings a different culture and a belief system around how money should be handled. In the 1800s you might talk about a European version of how money and household finance and small business finance should be handled. Now you have to talk about Asia and Latin America and those cultural beliefs. Finance has to speak a wider variety of emotional languages.

All that people want to have happen with their money is: simplify my financial life, heal the mistakes of my learned taboos, and crowd-source breaking us free of debt.

This is my version of what a bank really should be doing, so any of you in the room who operate or come from banking will see this as familiar. In the short-term, people save and spend. In the longer-term, they invest and borrow. In the I'm-not-sure-when-I-need-to-do-it-but-I-should, they insure and donate. What I'm saying is let's put those six functions into an environment where people get feedback as to their effects on their impacts, on ethical and other issues that they care about.

We know that banks balance two different operating systems. The regulatory (bank safety) system and the asset values of the loans that they hold. This is how we depict what a bank is: it takes money in at the top, it owes the depositor a safety, it puts that money into investments that are of different flavors, durations, and yields. But those investments are claims on real assets. They are people and they are businesses and they are cities and regions. To the extent that we don't really understand what a bank does, we hold some of that money aside as reserves. We know that an asset is real because it creates impacts in the real world, and that's the *true value*. That's where Catholic Social Teaching, I think, is either proved or disproved by the way the money is handled. From the banks' perspectives, we believe that you'll be answering, "Where is our money and what is it doing?" using that bottom impacts layer as business intelligence for management of the bank's diversity of investments and loans as well as to establish trust, and in many cases, reestablish trust with the customer, the depositor, or the business borrower for whether the bank really has the right motives and will be pursuing ethical goals that are common.

Banks have not, in the U.S., been consistently funding much of anything. Although, real estate has gotten its oversized share. The black line here is real estate lending over 30 years. You see that, in this slide, the banks are doing a good job of investing in each other, not in growing businesses. That has to change. We have some evidence from Europe that banks that are more attune to their impacts are safer in every financial way

that you would buy a bank stock through crisis years. This is from a report by the Global Alliance for Banking on Values (GABV).

Now, in terms of why you would show the impacts of finance. When we grow up in a certain faith-based tradition we think about impacts in a very specific way. The process by which you could take money in from a depositor who tells you, my goal is to reduce poverty, my goal is to mitigate climate change, my goal is to assure civil rights for more people. That story that the depositor represents and believes in could also be a way for you to listen to the borrower's application for what is his business or her business achieve. Is it reducing its environmental waste? Is it improving the education of its workers? A sustainable bank would put those two stories together. The story that the depositor represents, the story that the borrower represents and transparently show everybody, including the bank and its staff, what impacts are being achieved.

I am building a Periodic Table of Quality of Life (QoL) Elements here at Stanford. To do that I went back and looked at the history of how the Periodic Table in chemistry was developed. You'll see in the older chart that they did two things. First, they said this is what we know to measure, these are the elements that we're aware of and have the science and technology to determine, and we left some blank spaces for elements that we can't measure yet but we know must exist. Over time the Periodic Table has changed. The atomic weights have become more specific and the unknown elements and brand new elements have been discovered. Were we to build a Periodic Table of Quality of Life to listen to all those stories of borrowers and depositors we would start, let's say, with health, and we would want to hear people who want the world to be healthier. Soon, as the Gates Foundation has found in Africa and other continents, we'd have to worry about urban systems. How our water and sewage and other wastes are handled. And we would soon say well, what's the form of energy in those places? Is it fossil fuel and does that pollute the air and contaminate the water? Would mitigating those forms of energy, shifting them to renewables, change the climate change picture for vulnerable regions?

You can see the interaction of these cells in a Periodic Table of Quality of Life. You see that they are adjacent and that they resemble the mosaic of investments that I showed you earlier, that are a portfolio of values you want to achieve. If you want to spend a lot of money on hospitals in Africa, you can do that and just invest in the one cell for health. But the cost of achieving, per 100,000 people, health for them would be much, much cheaper if the water that they drank and the food

PANEL IV ▷ NUTRITION FACTS OF FAITH-BASED INVESTING : LEVERAGING DATA SCIENCE TO CONFIRM COMPLIANCE, PRUDENCE AND CONGRUENCY

that they eat is healthier. So, there is a portfolio effect much like values at risk modeling. I call it functional values at risk. The math of this table computes to a credit score that I call Sustainable Resiliency®, which then can be listed to a company or corporate effect on a region, and say per 100,000 residents, you're making us healthier just by being responsible as a business owner.

These slides are different ways for us to focus your attention on the elements that matter in the Periodic Table. For example, it's great to have solar roofs on poor peoples' houses or settlements, but if they have high debt that would be an impact that needs to be addressed first. Impacts across a Periodic Table also help us reestablish trust in our financial system. As you know, after the 2008 crisis, particularly the Millennials have lost trust in banks.

Let's look at Net Promoter Scores (NPS), I think you probably have them in Europe. An NPS is: would the customer that you have, recommend to a customer that you *don't have*, that they use your business or your bank. Many of the banks are at the bottom of this chart. In fact, they have negative ratings. For example, Goldman Sachs is at 5, MasterCard is at 5, Chase Bank is at -2, Citibank is at -41. In other words, people who are customers of Citibank would, 41 % of the time, say

don't use Citibank. Compare that to a group called USAA, which is an online mobile service for our military families — basically a banking and insurance group — gets a very high rating of 81. Tesla Motors gets a 96 rating. So, you can see that establishing trust, and that trust being based on the impacts of the supply chain and the operations of the brand, is important.

Again, data do speak for the poor, and this is one of my huge takeaways from my time at the Vatican with Father Séamus, Cardinal Peter Turkson, and the Pope. If we want that data to be meaningful in our financial lives we have to give it a place to speak. This is a label that I've proposed with Father Séamus, whether the targets are right or need to exist is far beyond what I can speak to, but I think we need to get those targets and to get that nutrition facts label out there both for the continuity of the Vatican and its congruency as well as everybody else.

So, let's build sustainable finance, starting with how the Church and people handle the Church's funds. That's what I had for you this afternoon before you go for either a Saint Patrick's Day beer or the traditional champagne. I hope that that's somewhat thought-provoking and gives you a sense of how we think here in the Silicon Valley. Now I turn it back over for the discussion.

PANEL IV Discussion

LORD BRIAN GRIFFITHS

— Bruce, this is Brian Griffiths. I've been asked to chair this part of the session. That was a fascinating presentation and I'm sure there are many people around the table with questions. I'm going to open it up for anyone to raise a question they wish to ask Bruce.

LUIS BAMEULE

— Hello Bruce. Last year in Argentina we had a Think Tank meeting in the Southern corner of South America. The issue there were the accounting standards, particularly of government. What they spend their money on, what are their actual assets, what is investment versus what is a normal political expense? I don't know what is the beginning or what is the end of this question, but basically, how would this impact your proposal? If we had better or more complete accounting standards both for companies but especially for governments and for political entities (countries, states, or provinces, municipalities etc.) wouldn't that be a huge step forward in the availability of nutrition facts labels for the public?

BRUCE CAHAN

— You are so right. If I can speak over an international connection, what I've proposed is very subversive, and the subversion is this: each government goes through a process of doing three things. It measures a problem, or says it does, and it develops Key Performance Indicators (KPIs) for how bad that problem is. Some of the numbers are real and some are not. Full-time employees (FTEs), is something government agencies keep track of, versus how many people is the government's health ministry keeping healthy. Second thing governments do is put money from taxes into the operating budget each year. The third thing governments do is they borrow money through bonds or sell government assets to add to the capital budget. So there are two budgets typically running in most governments. The capital budget gets spent, not just in one year, but over the course of capital projects.

What you say is very correct. I want to take all the money, and the way we're approaching building this Periodic Table,

is to take 30 % of the GDP of America that is spent and allocate it to its functional value at risk. If it's for health, it's for health. If it's for crime and safety, it's for crime and safety. If it's for defense, defense. Then look at the KPIs that were used to measure, to justify in effect, appropriating the money into the budget categories that it was. To go back to 2000 and forward to 2025 or 2030 and see over those twenty-five, thirty years did the KPI that appropriated the money change? Did the people get healthier? For the education budget, did the people get smarter? Did people get healthier and smarter and thereby earn more in income? To do that, not at all for the purpose of criticizing the health ministry, but to create a dashboard that everyone can operate off of and say, you know what, the reason the health people didn't make people healthy for three or four years is because there was a contamination of the water, or we defunded the environmental regulations that kept the water clean, or we don't look at how the food our people are eating is made and made unhealthy. So that you see from a portfolio management point of view, not a year-to-year winner-take-all exercise, whether the entire portfolio of funds and KPIs the government is supposed to manage is optimized. In other words, are you funding health and clean water and clean air and washing your hands education at rates that are from a machine learning or algorithmic Big Data science point of view, the optimal activities.

I hope that made sense. This is a way to hold governments accountable for their overall decisions, not just the news of the day budget defunding that we react to in isolation. Let me compare it to nature. Nature does not like monocultures. A monoculture in nature would be growing only corn in parts of our country and no other crop. Monoculture thinking is what these governments and budgeting processes have been doing for years and trying to pit one silo or interest group with its monoculture thinking against the next. That's not healthy and it's not gotten us to where we need to be. Was that an OK answer?

LORD BRIAN GRIFFITHS

— It was extremely thorough, Bruce. Who else would like to ask a question?

BRUCE CAHAN

— You're talking to a recovering lawyer so answers are never one sentence, Brian.

LORD BRIAN GRIFFITHS

— Well, can I say, and neither should they be. Because, life is complex. What you just said reminds me of the time I was five-and-a-half years advising the Prime Minister in 10 Downing Street. I discovered there that the British government has an ecumenic expenditure account but it never produces a balance sheet, and the Treasury, the last thing the UK Treasury ever wanted was a balance sheet. So,

in London for example, if you come to London at this time of the year, just before the financial year finishes on April 5th, you'll find it very difficult to drive around the streets because every local authority is spending money trying to do the roads. It's crazy and about the most non-economic way of allocating resources. So, I really appreciate there what you said.

BRUCE CAHAN

— I just want to put one follow-up thought for this. We fight a lot of wars, collectively. Then we lose the peace because the installed government has no transparency of accountability such as what we're describing. So, I suggest the next time we fight a war and hand the keys for running the government over to whatever group, we hand them a Periodic Table of Quality of Life and say we're going to judge the international aid that we invest in your country based on what you did here.

JOSÉ MARÍA SIMONE

— Hello, how are you? I'm José María Simone and I'm from Argentina. We are two here which is more than enough for one meeting. How advanced is this Periodic Table (which is very interesting) and how much information is needed in order to start discussing the indicators you have in your presentation? It will be good to understand because we are coming from different countries and will need homogenous kinds of indicators to compare the different information in order to really have a good, timely performance analysis. Maybe something for the developed countries versus the underdeveloped countries? I don't know if you have already gone through that.

BRUCE CAHAN

— It's a great question. By the way, I have like half of my family in Argentina, and Carlos Corach is my cousin, who was Minister of the Interior under Carlos Menem. I don't know where politically that puts him, but I've been down there a couple times.

JOSÉ MARÍA SIMONE

— So, you know the political affairs there?

BRUCE CAHAN

— So I've been told.

The answer is that there are individual government accounting standards and international standards because these governments all issue bonds. Either federal, national bonds or provincial, state, or local bonds. And those bonds have to be benchmarked against the operating budgets to pay the debt service. There's an appetite, let's call it, in the financial community for consistency of accounting so that you can make those judgments across regions. The detail that I'm talking about here is, as you said, whether it's at 10 Downing Street or 1600 Pennsylvania Avenue in



PANEL IV ► DISCUSSION

Washington D.C. or in Paris or in Buenos Aires, that there are different hurdles. It's a question of demand, I think. If the financial community wants this level of granularity to the data, the governments who want to finance their operations competitively at competitive rates will comply. Particularly, for governments in Latin America. We had a group here from Brazil, I think the sovereign borrowing rate a few months ago was at 14%, which is a very formidable interest rate for governments to borrow funds at and play for projects. If there were an interest rate incentive, such as Catholic funds saying, "You give us better data to see the impacts on how you're helping people over time, and we give you a discount on the interest rate that we'll demand in exchange for that data, because even knowing that you can get us the data consistently assures us that the funds are managed better and invested smarter and more collaboratively across all of

the functional values at risk that can be managed this way."

I think it's up to the international finance groups, the shareholder advocacy, the stuff that Father Séamus works on so diligently, to make the demand for the better data from these governments.

LORD BRIAN GRIFFITHS

— Thank you very much indeed for answering these questions and for your presentation which was extremely thoughtful. The points you make about compliance, prudence, and congruency certainly strike a chord with me. I'm afraid we're already running late, Bruce, so we have to cut off the question time. Many thanks indeed.

BRUCE CAHAN

— Thank you all and Happy Saint Patrick's Day !



▷ JOSÉ MARÍA SIMONE

I would like to thank you, all of us and all of you that have come in from several countries and several places. Also, thank you very much for those who had the responsibility of giving us their thoughts and documents. As always, I have to thank our host Michel Camdessus for giving us the opportunity to be here for this annual meeting, which gives us the opportunity to discuss several useful things. Most importantly, this meeting allows us to think on things that are related to us.

I would like to thank someone else who is not with us today but who has been very important to the development of UNIAPAC, and this is Mr. Don Lorenzo Servitje. We have him as a good friend, as a strong supporter and a person who guides us in many ways. In the name of UNIAPAC, and having here José Ignacio Mariscal, I would like to thank him and give thanks to his family. We really appreciate him [applause].

During the whole day we've discussed several subjects. I will just touch a little bit on the things that I consider the most important.

I found out that there's a guideline that was issued two years ago by Pope Francis called *Laudato si'*. The *Laudato si'* encyclical is kind of a trigger to realize what the world needs, and what we can do from our viewpoint — the business viewpoint — in order to look for the common good around the world. This morning, we talked about food. One of the main issues of *Laudato si'* is the objective of caring for the poor. I found out a very good definition from Xavier de Bayser, which is the ratio he created called WATFOR. This WATFOR is related to the humidity of the land in order to have a better production of food to assist the poor. I would like to create the WATFOR for us, as human beings. I would like to consider starting to look at a WATFOR that measures the humidity of personal relations. Because I think we need to understand the people and individuals we are working with more and more, to try to find out what are the needs and what we can do together to service those needs.

Afterwards, we had a presentation by Dr. Jack Reich who talked about health and this very, very important change in the way we tackle diseases through gene therapy. We had a very important discussion on the ethical responsibility of gene therapies. We discussed about the individual and the person, on how to apply these developments. And then, how this can be developed and continued in order to impact more and more people. Jack said this is a revolution, and I fully agree with that. We are changing the viewpoint, but changing the viewpoint of how to assist health

with a different concept, which is going to the actual origin of a disease. Again, this is related to *Laudato si'* as well.

Séamus Finn talked about financial investments, which was also completely and coherently covered by Bruce some minutes ago. As mentioned, the need to care for God's creations, and sustainability related to environmental protection, climate change, genetic engineering, etc. are things that we have to take care of. Faith-consistent investment is a very interesting approach, which analyzes where we are investing and how finance should assist the companies in development. This is really very important for aspects which are related to how the economy can assist in the development of the human being.

Bruce just threw a lot of information and data at us. For me, there was one very important word which was mentioned at the end, and that is the need of having *congruency*. To me, congruency is integrality. To be able to put all these facts together from the viewpoint of the person, from the viewpoint of food, of health, financial information, investments, in order to develop the human being and continue growing the common good of the whole society.

This discussions that we had today have been very, very important and I think it will take us a little bit of time in order to analyze everything, and we will certainly send it back to you. It has given us some objectives that we can start working towards through UNIAPAC together with several other organizations, which I think is the way we should be doing it.

Just let me read part of a document that was done by UNIAPAC as a reference to the encyclical *Laudato si'*, which I think summarizes the thinking processes that we have within UNIAPAC. It says:

As businessmen, we are called upon to be truthful and to adopt an attitude as servers, other than masters, in our dealings with the world. This human ecology is a culture of care. Of loving our neighbors as we do ourselves. In the entrepreneurial world, our neighbors are our staff and their families. The communities in which we operate, our shareholders, suppliers, distributors and clients. In addition to the surrounding environment, which from a human perspective is understood to include future generations. The encyclical Laudato si' seeks to encourage the creation of the necessary conditions in order for each individual to be able to develop their talents as much as possible, and to be able to decide autonomously the most effective and efficient way to achieve this goal through a participatory process. The products, services, and the jobs that businesses provide, and the economic and social surplus available to the



CONCLUSION

society are foundational to ensuring that a nation and humanity as a whole can lead a dignified and quality life.

I think this our future and these are the concepts that we should work together on, in order to develop thinking about the other human beings that are around us. Once again, I thank you very much for this very fruitful meeting that we had today. Finally, I would like to ask Edouard to make a short reflection as a closing of our meeting.

▷ EDOUARD HERR, S.J.

I think we must be grateful to all of us to be ready to share our thoughts and I think that progress is done in sharing and listening and to be at the perception of our world and to go together with the teachings of our Popes John Paul II, and Benedict XVI who was so keen to tell us that the economy of inclusion is also inclusion of God himself in our lives. Francis complemented this in saying that inclusion is inclusion

of all man, especially the poor ones. I think there we really have a program, and I think today we tried with several aspects so stimulating that we can be very grateful of this organization. I think the best attitude we have is to join Christ and to pray together to our Father who wants the best for all humankind and to send us His Son to be in solidarity with us.

*Our Father who art in heaven,
hallowed be thy name.
Thy kingdom come.
Thy will be done on earth, as it is in heaven.
Give us this day our daily bread,
and forgive us our trespasses,
as we forgive those who trespass against us,
and lead us not into temptation,
but deliver us from evil.*





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UNIAPAC FOUNDATION THINK TANK PARIS, March 17, 2017

Dear friends,

Since its creation in 2011, our Think Tank has come together to discuss themes directly addressing the way, we, as executives, can live up to the call to foster the integral development of the person in our responsibilities as business leaders. Following on from our book “The Profit of Values”, we have shared our experiences on a form of Corporate Social Responsibility that is deeply rooted in the needs of the human person. Through the modes of management we advocate and have set out — firstly in our contribution to the Catholic Church’s document “The Vocation of Business Leaders” and then in our publication “Respect in Action – subsidiarity applied to management”, written in close collaboration with the John A. Ryan Institute of St Thomas University — we have continued to develop our thoughts on the role and responsibilities of CEOs and on their conduct in their companies. We have explored the ideas and values underlying these concepts.

Our Think Tank sessions, which we subsequently publish and distribute across our Uniapac network, help to nourish the spiritual and professional path of our members around the world and build a foundation of open dialog with all persons of good will seeking ways to create a better world. They are a wonderful gift, which can be enriched and developed further to promote an economy that serves humankind.

The manner in which business leaders manage their employees and carry out their corporate responsibilities will of course always be a fundamental part of their vocation. We also believe, however, that business is key to tackling the major challenges facing our world today, challenges which increasingly feed fear and anxiety, which in turn can lead to the extremism that we now unfortunately see too often.

Population growth is creating a fear of food shortages and is leading to the overexploitation of our earth, which itself creates environmental issues threatening our sustainability. Finance without values or limits induces behaviors and attitudes that not only enslave mankind, but which also lead to the overexploitation of our natural resources. We have made tremendous progresses in terms of our life expectancy thanks to the impressive advances in medicine, but at the same time, such innovations also engender a fear toward the very nature of human life. Other impressive advances are being made in other fields like data management, communications and energies, etc.

Rather than nourishing the hope of a better life, these advances, along with the globalization of the economic world, instant communication and its often short-term tropism, create a general fear and more specifically a general feeling that business is the cause of the world’s troubles and therefore must be fought or severely restrained.

We know that freedom without truth, and on the same token business without values, can indeed lead to many abuses and the potential destruction of our common home. This is why we have focused our work on social responsibilities and management behaviors, grounding them in the fundamental respect for the human person.

But we also know that business, through its capacity to innovate, its ability to harness energy and mobilize minds, through its dynamism and agility, can be THE solution to most of humanity’s issues and fears. This was particularly illustrated at the Conference organized by UNIAPAC in November 2016 at the Vatican, which gathered 500 business leaders and decision makers from 49 countries to work and share on the topic of social & economic inclusion.

The Holy Father, concluded his address to the participants saying:

>>>

>>> *I hope this Conference may be like the sycamore of Jericho, a tree which you are all able to climb, so that through the scientific discussion of the aspects of business activity, you will find Jesus' gaze, and this will produce effective guidance to ensure that the activities of all of your enterprises always and effectively promote the common good.*

Three concrete objectives were fixed at this event:

- To reflect on a new collective and individual meaning for work
- To experiment new business models and promote innovative social ventures
- To train future generations of business leaders to understand the social and environmental challenges they will have to face.

As a follow up to this high-level conference, we have chosen this year to address the topics of health, food and finance, three areas in which business is already offering solid solutions. We will have the honor to welcome three speakers with the unique combination of a very high degree of academic expertise and solid and long entrepreneurial practice.

On the topic of health, we will benefit from the experience of a world specialist in gene therapy research and applications, a field which will revolutionize the treatment of major illnesses: Dr. Jack Reich from San Diego in USA. Dr. Reich has extensive experience in gene therapy. Co-founder of the first gene therapy Company, Viagene – which was acquired by Chiron – he went on to found Collateral Therapeutics, the first gene therapy company in the world to focus on cardiovascular diseases, which was subsequently acquired by Schering AG. He then founded the company Renova, which he now chairs, developing gene therapies for heart failures and type-2 diabetes. Jack has a BS and MS degree in Pharmacy & Hospital Pharmacy Administration and a PhD in Pharmaceuticals. He will present how this technology is now so advanced that it can literally cure major diseases, and why private business is a key accelerator for these innovations and the ethical challenges raised by this technology.

To address the issue of food and agriculture, Xavier de Beyser will talk about new forms of agriculture that could not only potentially eliminate all food concerns in the world but also improve the horrendous conditions of many populations particularly in Africa. Graduate of the Ecole Supérieure de Commerce de Paris, Xavier started his career at the Credit Chimique (Péchiney), where he became Financial VP. In 1988, he founded Finindice, the leading quantitative portfolio management company, which he managed successfully until 2000. He then created IDEAM (Integral Development Asset Management), a subsidiary of Credit Agricole specialized in socially Responsible Investment. He is also Founding Chairman of the Comité Médecis, a Think Tank which meets every year at the Villa Médicis in Rome, to work on issues of societies and their relationship with finance. He has published three books on sustainable development, providing practical examples of break-through innovations in agriculture in tropical regions.

We will also have the honor to hear the presentation of Professor Bruce B. Cahan of Stanford University on the work done by Stanford University in developing a business model for sustainable finance using data science. He is a lawyer from the Temple Law School in Philadelphia. After practicing as a lawyer, he joined Asian Oceanic Group as Managing Partner of the New York real estate branch of this Hong Kong-based merchant bank. In 1991, he joined Urban Logic, Inc. in New York as President, developing innovative finance strategies for city projects on infrastructures, data systems and street network developments. His company was particularly involved in helping NY city to manage the 9/11 aftermath operations at Ground Zero. While still practicing as a finance lawyer, he is now teaching at Stanford University, in the Civil & Engineering Department. Not being able to be physically present at our meeting, he will be joining us via videoconference, and will be represented by Reverend Seamus Finn, OMI, who serves as Vice Chairman of the Board at the Interfaith Center on Corporate Responsibility, and who sits on the Executive Committee of the International Interfaith Investment Group. Reverend Finn was also very instrumental in helping the mining industry to develop an environmentally friendly business model, quite a challenge for this industry, while engaging local communities in the sustainable development of their area. Reverend Finn will present this program as a complement to Professor Cahan's presentation.

After these presentations and debates, we will focus our exchanges on how we can better support these initiatives and, more generally, how we can further the capacity of business and its innovation capability to solve humanity's issues.

Pierre Lecocq, Chairman,
January 18, 2017

INTERNATIONALCHRISTIAN UNION OF BUSINESS EXECUTIVES

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A SIMPLE SOLUTION FOR EQUITABLE ECONOMIC GROWTH

Xavier de Bayser

For decades now, the international campaign against hunger and malnutrition has been ineffectively managed. Governments and international organizations have developed an ecosystem supposed to combat hunger that has been generally disastrous.

Billions of dollars have been spent by developed countries in order to promote agricultural exports to developing countries. Such intensively mechanised agriculture, using chemical products and genetically modified organisms, has deteriorated soils and threatened the environment.

The distribution of food to combat hunger has also been ineffectively managed: huge losses of cereals have occurred in reserve storage, cereals have been distributed to wealthy dealers rather than directly to the population suffering from hunger, and hefty commissions have been paid to employees of international organizations.

The entire situation could be radically transformed simply by implementing a few basic ideas.

Let us take the example of vegetable gardens that might possibly save the whole world from hunger. It would surely seem more effective to grow vegetables in countries suffering from famine than to import cereals from developed countries.

The unexploited potential for food production in tropical countries is colossal. Vegetable seeds are much more productive than cereal seeds: their unitary weight is one hundred times inferior. Judiciously cultivated they can provide six times more food in a year. The nutritional potential of vegetables is much greater and more diversified than that of cereals. In tropical countries food production can be boosted simply by optimising the combined effects of water and sun.

Sunshine is a free commodity that is largely wasted in tropical countries, but very few people have reacted to this state of affairs. When you see an open water-tap running without being used, you react immediately, but nobody cares about seeing solar energy unexploited for the growth of vegetables.

For example, if you take a look at vegetable gardens alongside the rivers Niger or Senegal, you can observe that these

gardens only produce vegetables for three months in the year, whereas sun and water are available year-long. Simply reacting to such a situation, in order to find a means of growing vegetables all the year round, could easily lead to a breakthrough that could eventually save the world from hunger.

Photosynthesis is one of the more important of nature's mechanisms. Under the leaves of a plant there are millions of micro-cells that exchange two gases: carbon dioxide coming from the air and steam of water coming from the soil. This exchange produces energy that makes sap rise in the plant and make it live and grow. If there is not enough humidity around the florosphere, the plant is no longer turgid, and dies even if it has enough water and sun. A plant that benefits from enough permanent humidity can grow all year long even under high temperatures as in the desert. By maintaining a humid atmosphere, it is possible to boost photosynthesis, and dramatically reduce the need for water.

Extensive research in maintaining humidity has shown that productivity can be multiplied by four, and the need for water divided by ten. The "WATFOR" (water to food ratio) is thereby increased four-hundred-fold. Using this approach two billion human beings could be adequately fed from five million acres of vegetable gardens, which is approximately the area of the Beauce region in France! On two and a half acres it is possible to produce seven hundred thousand bio-lettuces in a year. From a surface of seventy square yards it is possible to feed a ten-person family for a whole year.

Within the last twenty years the French company J.T.S. (now J.T.A.) has successfully developed a practical method for implementing this type of agriculture in Africa, with the help of Jean-Marie Cordier (an engineer from the French National Institute of Agronomic Research I.N.R.A.).

The challenge is now this: to make this simple practical solution become an effective leverage for saving the world from hunger. A start could be to create vegetable gardens along the seven thousand four hundred kilometres of the "green wall" extending from Dakar to Djibouti. >>>



ANNEXE #02

>>> Planting three hundred and fifty vegetable gardens each of fifty acres could feed seven million people and create thirty-five thousand jobs. If the scheme succeeds, these gardens could be enlarged in order to sell fresh vegetables to the big African townships. In the future inflatable air-ships could be used for refrigerated transportation.

A recent study has shown that the market for fresh vegetables in Africa within the next twenty years could attain some fifty billion euros. The “green wall” surface from Dakar to Djibouti could be able to satisfy this demand. However, such a project could only be undertaken by private companies.

To create three hundred and fifty vegetable gardens of 50 acres each, an investment of seven hundred million euros is required. This capital could easily be raised, given the high profitability of the gardens. The investor would recover his capital within three years. Part of the profit could be used for training African personnel and for planting medicinal plants to cure endemic diseases (for example, an infusion of Artemisium Afra can cure malaria within ten days with a 99,5 % chance of success).

So, these gardens could be called “gardens of peace”. They represent solutions to the problems of famine, immigration, terrorism, child labour, global economic growth and even national budget deficits.

Simplicity thus really becomes beauty. This kind of simple approach could be extended to tackle problems of malnutrition, energy production in remote areas of poor countries or eradication of endemic diseases. Solutions exist!

Only the private sector has the means of finding the best solutions for the development of poor countries. However, nothing is possible without love!

So far, we have together followed the path of simplicity. But I can already hear the chorus of the sceptics beginning the song of “Utopia”. All these initiatives, however praiseworthy they may be, will remain as isolated oases of fervour that will inevitably be deadened by the dryness of our individualisms. But is it not in the desert that we discover the breakthrough that can overcome our aridities (the desert waters our hearts and quenches our thirst for humanity)?

It is only when we lack everything, that we can discover what is essential, when the saxifrage can grow in the fault of hard rock, and when frailty can be united to strength.

As we seek to heal the wounds of our most unjust world, in contact with its fragilities, on the paths of simplicity, on the way to our native home and listening to the teaching of nature, we discover the fundamental norms of life which are also applicable to man.

Saint Bonaventure tells us that the natural order is merely the reflection of the divine order. These laws are simple and based on exchange, a veritable ecosystem of love. Nature is an exceptional educator and emphasises the virtues of simplicity: earth, seed, water, and sun are the bases of life. Our secret gardens, our souls can receive their inspiration. There exists a genuine analogy between the photosynthesis that drives the growth of plants, and the exchange of love that is the vital force of our souls. God’s word that fertilises our souls, the water of the spirit, and the rising sun of Christ that comes to visit us, all these make the sap of life rise within us. Just as the exchange between carbon dioxide and steam of water make the plant’s sap rise and keep it turgescent, likewise the exchanges of love with our brothers keep our souls alive. Love flows from turgescent souls. Thus, our oxygen is our neighbour. The love of our neighbour, thanks to a sort of sacred anabolism burns the cells of our souls, thus maintains our vital forces.

In this way, at the end of the path of simplicity, and in contact with nature, we discover that by seeking to procure food for our brothers, we discover the source of the vital energy needed to transform our utopia into reality. For, in order to take up the challenge of simplicity, we need the vital force of love. The path of simplicity leads us back to our native home, to the treasure of our origins.

Thanks to our exchanges, fraternal love becomes the yeast of our human dough.

Our future lies in the heart of man. Simplicity, Leonardo de Vinci’s supreme sophistication, appears to us the best path to follow. Thus we follow Fénélon’s advice in *Telemachus*: “Place your glory in simplicity.” In this journey towards our native home we again find in Lamartine’s poetic intuition (*La Terre Natale Book 3*): “Inanimate objects! Have you a soul that adheres to our soul and forces you to love us?” So, our experience in the field brings us back to the peak of the reflection of our greatest artists, and prophets of self-sustainable development. At last we rediscover that coherence which encourages us to take up the challenge of simplicity.



GENE THERAPY A REINVENTION OF MEDICINE: SOCIAL, ECONOMIC AND HEALTHCARE DELIVERY IMPLICATIONS

Jack W. Reich, Ph.D.
CEO & Co-founder
March 17, 2017

WHAT IS GENE THERAPY?

- Replaces defective, down-regulated or missing genes
- May be seen as hormone replacement therapy
- Can disrupt disease process with a single administration
- Relies on dependable delivery mechanism and must be safe
- Two types:
 - somatic (affects individual only)
 - germline (heritable)

HISTORY OF GENE THERAPY

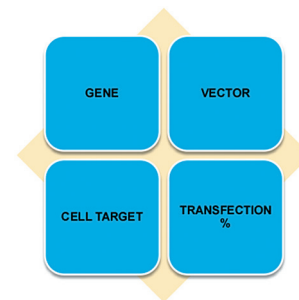
- Clinical development began 28 years ago
- Heavily focused on rare diseases and cancers
- 2400 + gene therapy clinical trials have been conducted since 1989
- 320 + gene therapy trials currently ongoing worldwide
- Gene therapies on the market:
 - **2003: China** - Gendicine for the treatment of certain cancers
 - **2011: Russia** - Neovasculgen for the treatment of peripheral artery disease
 - **2012: EU** - Glybera for the treatment of lipoprotein lipase deficiency, a rare inherited disorder

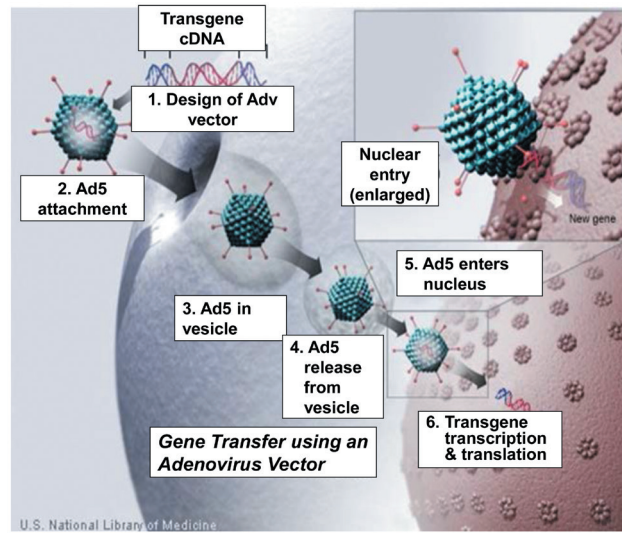
WHY GENE THERAPY?

- This technique – the process of which is known as gene transfer – is expected to one day allow doctors to treat a range of disorder by using genes instead of drugs or surgery
- Indications addressed by gene therapy clinical trials so far include: cancers, monogenic diseases, infectious diseases, cardiovascular diseases, neurological diseases, ocular diseases and inflammatory diseases.
- **Different from a daily pill**
 - Can reverse the disease process, not just treat symptoms
 - Can improve cell and organ function, not just decrease demands on body
 - Can confer benefits after a single dose – no need to administer frequently
 - Not subject to compliance problems, drug-drug interactions and other challenges that exist with conventional therapy

WHAT IT TAKES TO SUCCEED IN GENE THERAPY

- Several factors play a critical role in gene therapy – if any of these components are not correct, a gene therapy will not be successful:
 - **Gene**: The right gene that is central to the disease-reversing process and effective when inserted in the cell(s)
 - **Vector**: The delivery method used to transport the gene to its target cell(s)
 - **Cell target**: The right cells to receive the gene
 - **Transfection %**: The level of uptake of the gene in the target cell(s) due to the right vector and route of administration





WHO IS RENOVA THERAPEUTICS?

OUR MISSION

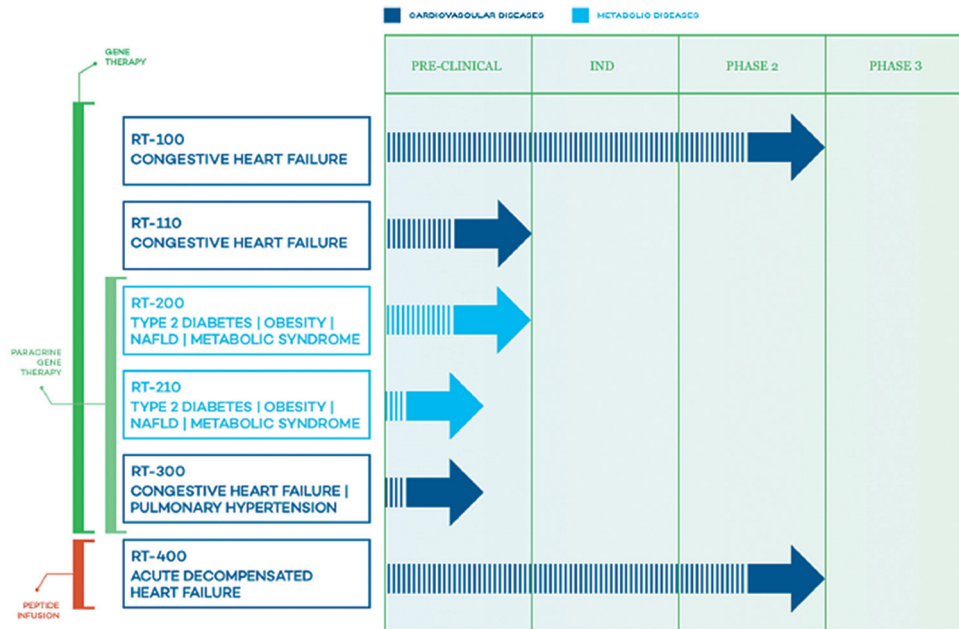
Creating transformational gene therapies and peptide infusions that treat the most prevalent diseases **to restore health and renew life.**

OUR VISION

A future in which we are able to permanently treat chronic diseases with gene and peptide therapies.

- Founded by pioneers in biopharmaceuticals and gene therapy with 50 + years of combined experience
- Investigational therapies based on carefully validated and proprietary research with substantial positive data
- Blockbuster pipeline of therapeutics that are designed to provide durable, life-long treatments for chronic diseases
- Privately funded; extensive intellectual property estate

WE'RE FOCUSED ON MAJOR DISEASES

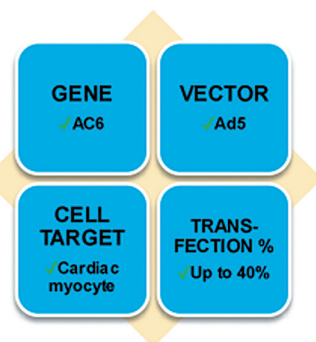


CONGESTIVE HEART FAILURE (CHF) PREVALENCE AND IMPACT

- Progressive and fatal chronic disease characterized by the inability of the heart to pump sufficient blood to meet the body's demands
- Affects approx. 6 million people in the U.S. and 28 million people worldwide
- Most frequent cause of hospitalization for people ages 65 and older (U.S.)
- Mortality worse than most cancers: 50 % of patients are dead five years after diagnosis
- 2012:** annual cost of heart failure in the U.S. was \$31 billion
- 2030 projection:** annual cost will increase to \$70 billion.

PRODUCT FOCUS: RT-100 AC6 GENE TRANSFER - CHF

- Novel, single-dose gene therapy delivers AC6 gene directly to heart tissue in routine outpatient procedure
- Phase 2 clinical trial published in *JAMA Cardiology*: **RT-100 safely increased function of the failing heart beyond optimal heart failure therapy**
- Two endpoints showed differences between the two highest doses of AC6 (combined) versus placebo:
 - Increased left ventricular peak – dP/dt
 - Increased left ventricular ejection fraction in participants with non-ischemic HF
- Symptoms of heart failure were reduced 12 weeks after therapy in the AC6-treated group but not in placebo subjects
- Morbidity and mortality – key safety measures in the trial – showed:
 - After one year of follow-up, one death of 42 (2.4 %) in the AC6-treated group and one death of 14 (7.1 %) in the placebo group had occurred
 - The annual heart failure hospital admission rate was 9.5 % in the treatment group versus 28.6 % in the placebo group
- Phase 3 trial commencing in H2 2017 across 60 US medical centers.

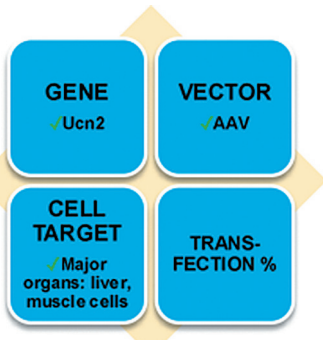


TYPE 2 DIABETES - PREVALENCE AND IMPACT

- Disease that renders the body unable to regulate blood sugar levels, resulting in a range of problems, including heart disease, kidney failure, liver failure, blindness, the loss of toes and fingers to nerve damage, and death
- 422 million people around the world have diabetes – a number that has nearly quadrupled from 108 million in 1980
- By 2025, more than 700 million adults worldwide could be affected
- In 2012, 1.5 million deaths were directly caused by diabetes
- By 2030, WHO projects diabetes will be 7th-leading cause of death in the world
- Direct annual global cost of diabetes is \$827 billion (WHO).

PRODUCT FOCUS: RT-200 UCN2 GENE TRANSFER - T2DM

- First-of-its-kind IV-injected, single-dose gene therapy designed to provide substantially improved, sustained outcomes in Type 2 Diabetes patients by normalizing blood glucose and A1c levels
- RT-200 delivers a therapeutic gene – **urocortin-2 (Ucn2)** – using a single intravenous injection, a common procedure that can be administered by medical professionals in any doctor's office
- The technology has been shown to safely and efficiently deliver the Ucn2 gene therapy in mice
- The human gene encoding Ucn2 is delivered via an adeno-associated virus (AAV) that is able to enter cells but cannot reproduce itself



>>>

- RT-200 possesses advantages over current diabetes medications: It is insulinsensitizing, circumvents the need for daily insulin injections, and reduces weight gain and fatty infiltration of the liver
- These findings, published in *JCI Insight*, indicate a promising strategy for treating clinical Type 2 Diabetes
- Phase 2 clinical trial commencing in 2018

GENE THERAPY - RISKS AND ETHICAL CONSIDERATIONS

- Adequate informed consent of patients
- Designer genes: introducing genes not found in nature
- Gene interactions & mutations (i.e., mutagenesis, carcinogenicity)
- Germline gene therapy: passing on changes to later generations
- Australia, Canada, Germany, Israel, Switzerland and the Netherlands prohibit GGT for application in human beings, for technical and ethical reasons, including insufficient knowledge about possible risks to future generations and higher risks versus somatic cell gene therapy
- Pricing of a one-time therapy.

WHY ARE PRIVATE BUSINESSES LEADING GENE THERAPY DEVELOPMENT?

- Private businesses bring together the necessary expertise required to develop medicine, more than simply science experiments
- Bringing medicine to the people via regulatory product approval requires knowledge of developing medical products – this is experiential expertise
- Gene therapy is a challenge of its own: experience developing new small-molecule drugs is not enough

DISCUSSION/Q & A

CST Principles Promoting Mission Alignment in Ethical Investments

Uniapac Foundation Board Think Thank & Honors Committee
March 17, 2017

OUTLINE

- Brief Historical Review of FCI Activities by Catholic Institutions
- Three Pillars of FCI/SRI that guide Investors
- The Corporate Story: What is the social purpose?
- Legal Compliance with regulatory authorities domestic and international
- Ethical Codes; UN Guiding principles; GRI; UN global Compact UNPRI, EITI etc
- Investor, customer and stakeholder inquiries.

Mission Alignment Opportunity for Church, Church Institutions and Catholics

- Mission Alignment for Catholic Asset Owner & Foundations
- Potential, Eclipse, Convergence or Opportunity for CST in SDG's (Columbia coal mine. HT supply chain?)
- Tsunami of Big and Digital Data as a challenge & a remedy
- Uniapac Network Opportunities
Support the leadership and call of Pope Francis
Relocalization on supply of certain sectors

CST PRINCIPLES

- Life & Dignity of the Human Person (abortion, addictive substances, discrimination, human rights)
- Call to Family, Community, and Participation/ Subsidiarity (governance structures, political rights)
- **Rights and Responsibilities/Government/private property**
- **Universal destination of goods and management of private property (inequality, indifference, environmental destruction)**
- **Option for the Poor & Vulnerable/Economic Justice (corporate responsibility, business practices)**
- **Dignity of Work & the Rights of Workers (labor rights, meaningful wages)**
- **Solidarity/social justice/Common Good (access to basic necessities)**
- **Care for God's Creation/Sustainability (environmental protection; climate change; genetic engineering, hazardous waste)**

Catholic Theological Foundation for FCI



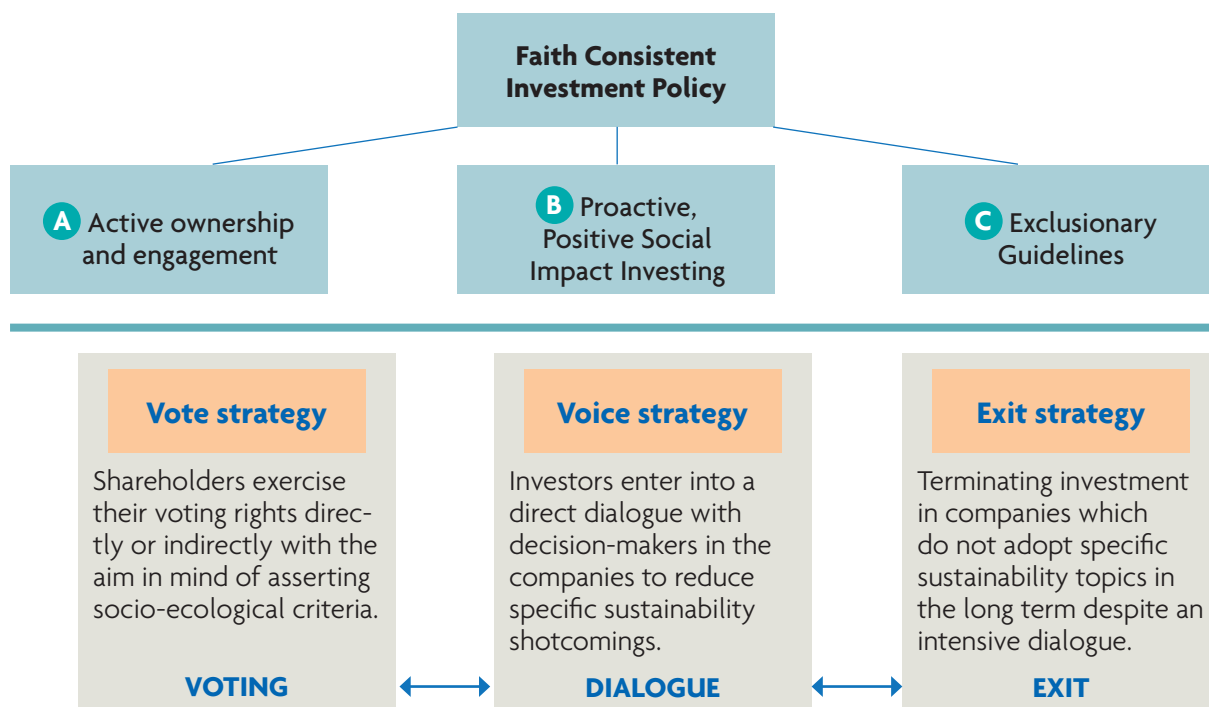
CST & CORPORATE SOCIAL RESPONSIBILITY

“...there is also increasing awareness of the need **for greater social responsibility on the part of business...** there is nevertheless a growing conviction that business management cannot concern itself only with the interests of the proprietors, but **must also assume responsibility for all the other stakeholders who contribute to the life of the business:** the workers, the clients, the suppliers of various elements of production, the community of reference.”

(Pope Benedict XVI, *Caritas in Veritate*, # 40, 2009)

CATHOLIC SOCIAL TEACHING

- General teaching at level of Universal Church
- Socially Responsible Investment Guidelines
 - US Bishops (1991 & 2003)
 - German Bishops Conference 2015
- 2 Responsible Stewardship
- 3 Pillars/Strategies
 - Do no Harm
 - Actively Engage
 - Positively Invest



OVER THE COUNTER DERIVATIVES CREDIT DEFAULT SWAPS

- **BE IT RESOLVED THAT** the Board of Directors report to shareholders (at reasonable cost and omitting proprietary information) by December 1, 2010, the firm's policy concerning the use of initial and variance margin (collateral) on all over the counter derivatives trades and its procedures to ensure that the collateral is maintained in segregated accounts and is not rehypothecated

UNIQUE TRANSACTION IDENTIFIERS

- The Financial Stability Board (FSB) today published a consultation document on [Propose governance arrangements for the unique transaction identifier \(UTI\)](#). The consultation sets out proposals for the governance arrangements for a global UTI, as a key harmonised identifier designed to facilitate effective aggregation of transaction reports about over-the-counter (OTC) derivatives markets.

THE EVOLVING CORPORATE STORY: WHAT IS THE SOCIAL PURPOSE?

And who could ignore BlackRock CEO Larry Fink's call in his February 2016 letter to US and European company chief executives: "Every CEO should lay out for shareholders each year a strategic framework for long-term value creation"?

Klaus Schwab, Executive Chairman of the World Economic Forum, has said that, "capitalism in its current form no longer fits the world around us". This conclusion is now broadly shared by business leaders, investors, policymakers and academics across the world.

I am in awe of what capitalism has achieved over the last century – the innovation it has inspired, the lifting of nations out of poverty and the absolute level of economic growth that has been generated. I find it astounding that US GDP alone has increased six-fold in a generation. Yet we must confront the problem that wealth today is not broadly shared, inequality within nations is rising and as the International Monetary Fund has said, this growing inequality is acting as a drag on economic growth."

(Paul Druckman, International Integrated Reporting Council IIRC)

Tom Wilson is chairman and chief executive officer of the Allstate Corporation and vice chairman of the U.S. Chamber of Commerce

- The emphasis on profits has widened the trust gap between corporations and society, resulting in an adversarial relationship between the private and public sectors. Let me be clear: Shareholders must get a good return, but at the same time corporations must work to be a force for good in society.
- The corporation of the next 100 years must take on societal problems. On their own, governments, social service and charitable organizations simply do not have the capabilities and resources to solve the problems of inadequate education, poverty or public fiscal insolvency.
- Corporations should be encouraged and rewarded for stepping up to solve society's problems. That will require a change in mind-set. Today, corporate leaders are graded on stock price, not on the amount of good their companies do. We must broaden our evaluation of corporations beyond share prices to provide space, light and water for their role to grow.

Potential, Eclipse, Convergence or Opportunity for CST in SDG's & other Benchmarks?

Sustainable Development Goals (Columbia exp. HT supply chain

(This led to the categorization of **231 indicators into 3 tiers, to be refined in coming years**, as described in the **IAE-SDGs Report to the Statistical Commission**).

Is this Tsunami of Big and Digital Data a challenge and an opportunity for the Church? **Can it enhance** a mission alignment Opportunity for Church, Church Institutions and Catholics.

Can the CST Principles contribute and benefit from this project?

Can we help the Vatican and other Catholic Institutions to achieve and model greater transparency and accountability in its policies in the financial and commercial operations.

Can the Uniapac Foundation and Network engage these opportunities?

Support the leadership and call of Pope Francis.

Bruce Cahan's Talk for Uniapac Thought Leaders in Paris

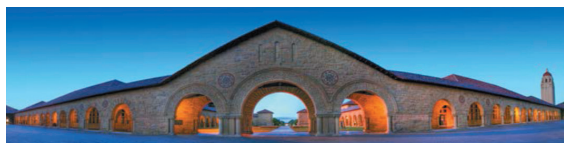
March 17, 2017

CONFIDENTIAL MATERIALS

NUTRITION FACTS OF FAITH-BASED INVESTING

Leveraging Data Science to Confirm Compliance, Prudence and Congruency

Bruce Cahan, Adjunct Professor Stanford University School of Engineering. A conversation prepared for Uniapac Thought Leaders meeting in Paris on March 17, 2017



Bruce Cahan, Stanford University Adjunct Professor, School of Engineering - Co-founder, Stanford Sustainable Banking Initiative.

Banking and Finance Innovator. As an Adjunct Professor in the School of Engineering and as an active participant the Center for Financial Risk and Analytics and the Center for Legal Informatics (CodeX), Bruce is reimagining banking and finance.

Bruce curated TEDxNewWallStreet and is creating GoodBank™(IO) as a teaching hospital bank to grow a new banker culture. Bruce's reports for the UK's Technology Strategy Board (KTN-FS) and other government and industry groups, and his input into bank regulatory policy and practice are sought after insights.

Bio. Recovering Wall Street lawyer, Hong Kong merchant banker, advised US, NY State & other governments on finance and geospatial innovations, 9/11 emergency responder, Ashoka social entrepreneur & father of 24 year old twin sons...

JD Temple University School of Law Bar Admissions CA, NY & PA. **BS Economics & International Business** Wharton School University of Pennsylvania. *Google Profile* <http://www.google.com/profiles/brucebcahan>



My range is passionately wide

▪ Teaching to attract a new cohort of Sustainable Bankers and Investment Professionals

- Sustainable Banking (CEE 244A 2012 – 2017)
- Ethics of Finance & Financial Engineering (MS & E 148 2017)
- Investing on the Buy Side of Wall Street (MS & E 449 2016 & 2017)
- Hacking for Urban Resiliency (MS & E & CEE proposed)
- Let's Build a Better Bank and Better Banking (GSB proposed)

▪ Research to reward Sustainable Finance customers' impacts

- Valuing what matters: Periodic Table of Quality of Life
- Three-Layered Map of the World so indigenous peoples use

money to match others' capacities to their needs

- Real Estate design, construction, use, insurance and financing decisions on the blockchain (RE-OS)
- Banking in Space & computational contracts of insurance to respond to disasters & humanitarian crises
- Parametric Flood and Natural Disaster Insurance
- Migration Storytelling Project to go back 5,000 years and see common journeys
- Faith-based traditions of sustainable finance, and how to implement them today

▪ GoodBank™(io) as an independent teaching hospital lab for sustainable bankers (Urban Logic)



► Uniapac assembled in Rome to move from Inequality to Inclusion:

Dear Pope Francis,

Business people gathered at this congress, worried about the need to create inclusion in the economies where we operate, for workers that generates labor opportunities. We recognize that in the past decades there has been a strong growth in the number of people who have been "expelled" from the productive sphere in several parts of the world. These are the "marginalized" you mention in your Encyclical.

For business leaders to take charge of this call, there is a need to discuss in depth how to create more opportunities for more people to participate and benefit from the economy; How to improve the lives of low-income groups so they are not just consumers of products and services but also producers using underutilized talents and skills. Entrepreneurship and innovation are fundamental for the development of an inclusive and sustainable economy.

Time has come to "break the chains poverty", that forest of impediments whose nature is political, social, economic and cultural.

We must reflect on the best ways to create a working environment based on the reciprocity between solidarity and subsidiarity, in which people can be its own agents **to achieve a better quality of life.** We believe that the most effective way out of poverty is the promotion of decent work, basement of responsible entrepreneurship, innovation and a justly paid productive work. As business leaders, we must continue our efforts to ensure that those **values that unite us: justice, solidarity, respect for human dignity and the common good,** are reaffirmed and incorporated into the daily practices of our companies. We must evolve towards **an inclusive and sustainable economy that develops human dignity through the joint**

efforts of governments, civil society and the business community.

This is our goal and commitment.

*José María Simone
Uniapac International President
Rome 17-11-2016*

How will Uniapac measure if it is achieving its goals from Rome?

Benchmarks could be catalytic

1. **Data Exists:** Corporations have the data to monitor and reward ethical conduct
2. **Sustainable Accounting Standards are Emerging:** Executives can receive a clear view of ethical health

3. **Bankers are Starting to Pay Attention:** What bankers join in Uniapac's commitment to Pope Francis?

4. **Investors are Paying Attention:** Are Uniapac bankers, wealth managers, insurance professionals and pension funds financing Uniapac's goals?

Inclusive economies measure impacts

Uniapac's Mission must aim at financing sustainable economies



Focus: Uniapac's November Pledge to Pope Francis

Q: How will Uniapac promote inclusive impacts?



OUTLINE

- Nutrition Facts Labels evolve as manufacturers learn
- Nutrition Facts Labels change behavior, supply chains
- Corporations need Ethical Nutrition Facts as Market Guides
- Massive Disruptions provide new transformation options
- Sustainable Banking attracts unlikely allies
- Vatican Finance Nutrition Facts Labeling, a proposal
- Banking Basics: Impacts as Fundamental Collateral
- Periodic Table of Quality of Life impacts, a framework

Nutrition Facts help us eat & live healthy

Mandatory labeling, brings data to the consumer

Basic foods labeling

Nature has few additives, but how growers process foods needs disclosure.

MISSING FACTS:

- **Environmental Justice** - Chemicals, pesticides, preservatives, pollution
- **Human Equity** - Fair labor practices
- **Supply Chain Mapping** - Where grown, stored, processed, sold
- **Scarce Resource Usage** - How much water & energy were used in growing, processing, storage & transport



- **Social Responsibility** - Housing & education for workers & their families

Appliances labeling - US

Focusing on energy, while ignoring other key issues.

MISSING FACTS:

- **Environmental Justice** - Chemicals used in manufacture, pollution, noise
- **Human Equity** - Fair labor practices
- **Supply Chain Mapping** - Where made, stored, recycled, sold
- **Scarce Resource Usage** - How much water & energy were used in processing, storage, transport & disposal



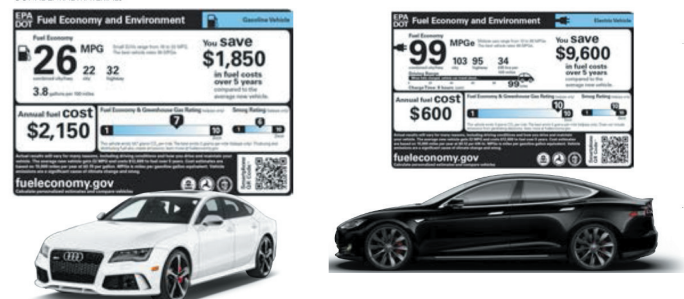
- **Social Responsibility** - Housing & education for workers & their families

Automobile labeling - US

Focusing on energy, while ignoring other key issues.

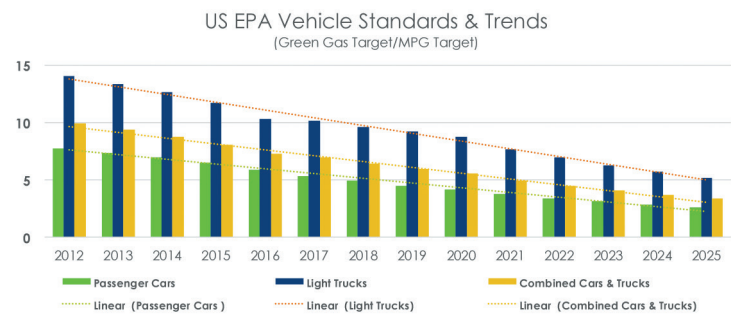
MISSING FACTS:

- **Environmental Justice** - Chemicals & pollution in mining & manufacture
- **Human Equity** - Fair labor practices
- **Supply Chain Mapping** - Where made, stored, recycled, sold
- **Scarce Resource Usage** - How much water & energy were used in manufacture, transport & disposal



- **Social Responsibility** - Housing & education for workers & their families

Mileage & Air Quality Standards



Nutrition Facts labels change us

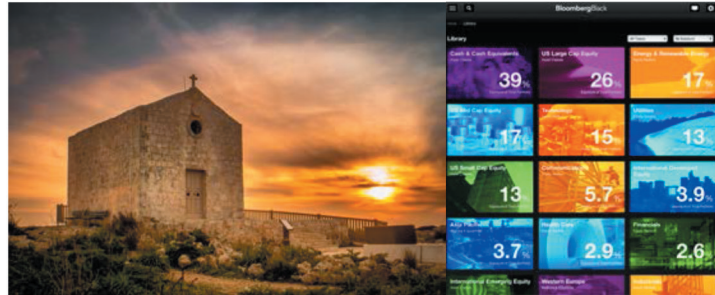
Corporate, citizen & science unify around measurable goals.



Incredibly... Finance has no Nutrition Facts labels

No Nutrition Facts for Investors

Business metrics are missing simplicity, consistency, fundamental values.



Finance without Nutrition Facts

PROBLEM	INVESTORS	BUSINESSES	GOVERNMENT	CITIZENS
Swings in Funding Fads, Interest Rates & Investment Yields	When & where to invest?	Harder to fund responsible business/agile product change	Banking, finance & pension systems collapse	Consumer debt drives or limits spending & saving, GDP
Impacts without Context	Benchmarking industry impacts is hard	Good corporate behavior lacks financial incentives	Pays for negative impacts/externalities	Suffer Poverty, Pollution, Inequity, Job Insecurity
Complexity increasing, without Purpose	Goal-tending by computer machine algorithms is myopic, risky	Can't tell business' story to computer algorithms	Overlapping reporting & regulatory processes	"Take it or leave it" consumer debt access is increasing poverty globally

The Callan Periodic Table of Investment Returns

Annual Returns for Key Indices Ranked in Order of Performance (1997-2016)

The Callan Periodic Table of Investment Returns conveys the strong case for diversification across asset classes (stocks vs. bonds), investment styles (growth vs. value),

capitalizations (large vs. small), and equity markets (U.S. vs. international). The Table highlights the uncertainty inherent in all capital markets. Rankings change every year. Also

noteworthy is the difference between absolute and relative performance, as returns for the top-performing asset class span a wide range over the past 20 years.

March 17, 2017 27



Callan Periodic Table of Investment Returns (Relative to Zero)

Annual Returns for Key Indices Ranked in Order of Performance (2007-2016)

Indices: ● Bloomberg Barclays Aggregate ● Bloomberg Barclays High Yield ● Bloomberg Barclays U.S. TIPS ● Credit Suisse Hedge Fund Index ● Merrill Lynch 3 Month T-Bills ● MSCI ACWI ex USA ● MSCI Emerging Markets ● NFI-ODCE Value Weight ● S & P 500 ● Russell 2000

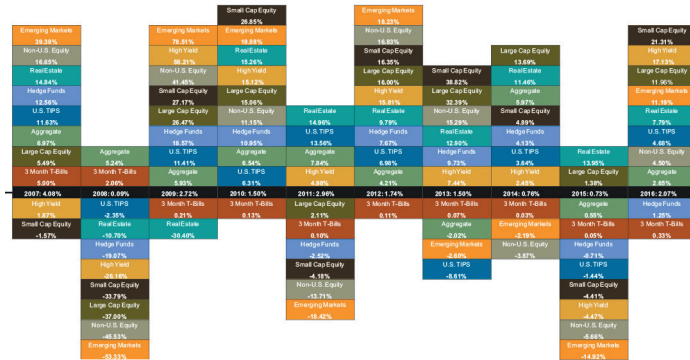


Callan Periodic Table of Investment Returns (Relative to Inflation)

Annual Returns for Key Indices Ranked in Order of Performance (2007-2016)

Inflation is represented by the Consumer Price Index.

Indices: ● Bloomberg Barclays Aggregate ● Bloomberg Barclays High Yield ● Bloomberg Barclays U.S. TIPS ● Credit Suisse Hedge Fund Index ● Merrill Lynch 3 Month T-Bills ● MSCI ACWI ex USA ● MSCI Emerging Markets ● NFI-ODCE Value Weight ● S & P 500 ● Russell 2000



Callan Periodic Table of Real Asset Returns (Relative to Inflation)

Annual Returns for Real Asset Indices Ranked in Order of Performance (2007-2016)

Inflation is represented by the Consumer Price Index.

Indices: ● Alerian MLP ● Bloomberg Barclays U.S. TIPS ● Bloomberg Commodity ● DJB Global Infrastructure ● EPRA/NAREIT Developed REIT ● NCREIF Farmland ● NCREIF Property ● NCREIF Timberland ● NFI-ODCE Value Weight



Callan Periodic Table of Fund Sponsor Database Returns

Annual Returns for Fund Sponsor Database Ranked in Order of Performance (1997-2016)



Callan Periodic Table of U.S. Equity Investment Returns

Annual Returns for U.S. Equity Indices Ranked in Order of Performance (1997-2016)

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
13.3%	22.0%	24.9%	17.6%	6.1%	16.3%	47.2%	22.6%	11.8%	18.3%	7.6%	20.4%	16.4%	26.8%	21%	17.8%	41.6%	12.8%	1.9%	28.6%
12.7%	27.6%	21.9%	18.8%	2.4%	16.5%	22.2%	13.9%	16.3%	2.7%	-20.7%	10.3%	26.7%	1.7%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.6%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%

Callan Periodic Table of Global Equity Investment Returns

Annual Returns for Global Equity Indices Ranked in Order of Performance (1997-2016)

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
13.3%	22.0%	24.9%	17.6%	6.1%	16.3%	47.2%	22.6%	11.8%	18.3%	7.6%	20.4%	16.4%	26.8%	21%	17.8%	41.6%	12.8%	1.9%	28.6%
12.7%	27.6%	21.9%	18.8%	2.4%	16.5%	22.2%	13.9%	16.3%	2.7%	-20.7%	10.3%	26.7%	1.7%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.6%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%

Callan Periodic Table of Investment Returns (Including Alternatives)

Annual Returns for Key Indices Ranked in Order of Performance (1997-2016)

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
13.3%	22.0%	24.9%	17.6%	6.1%	16.3%	47.2%	22.6%	11.8%	18.3%	7.6%	20.4%	16.4%	26.8%	21%	17.8%	41.6%	12.8%	1.9%	28.6%
12.7%	27.6%	21.9%	18.8%	2.4%	16.5%	22.2%	13.9%	16.3%	2.7%	-20.7%	10.3%	26.7%	1.7%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.6%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%
12.4%	20.3%	21.4%	11.6%	1.4%	16.2%	18.3%	15.3%	15.7%	5.8%	-16.7%	16.3%	16.3%	1.9%	17.8%	18.4%	11.4%	1.6%	12.4%	12.4%

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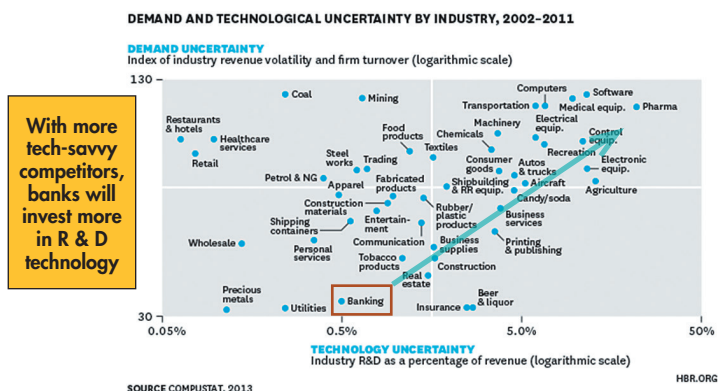
Callan Periodic Table of Hedge Fund Strategy Returns

Annual Returns for Credit Suisse Hedge Fund Sub Strategies Ranked in Order of Performance (1997-2016)

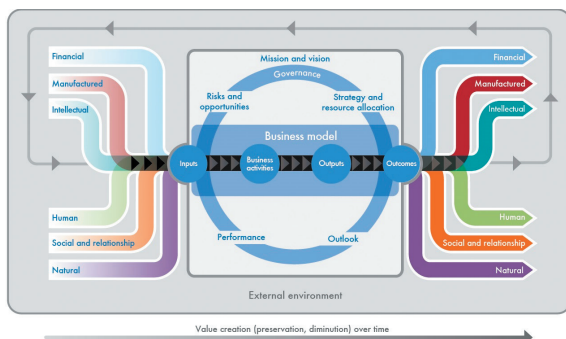


Industry Disruption is accelerating

Lots of transformation that will generate better data analytics.

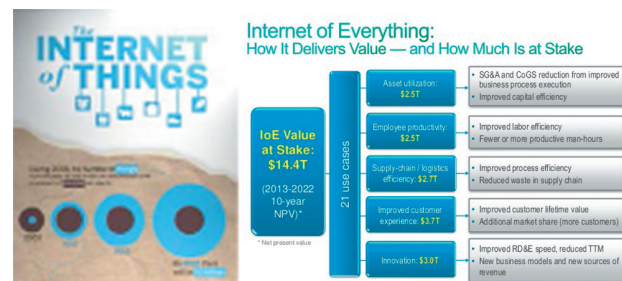


Industry Transforms 6 Forms of Capital



Internet of Things data not yet in banking

Huge resource for managing banks' safety, profit, trust, impact challenges.



Finance needs Nutrition Facts Labels that use the new sources of impacts data

Sustainable Banking Attracts unlikely allies, a movement taking hold

A Jewish boy from Philadelphia meets someone special.



A wonderful synergy

What if you had 45 seconds with Pope Francis?



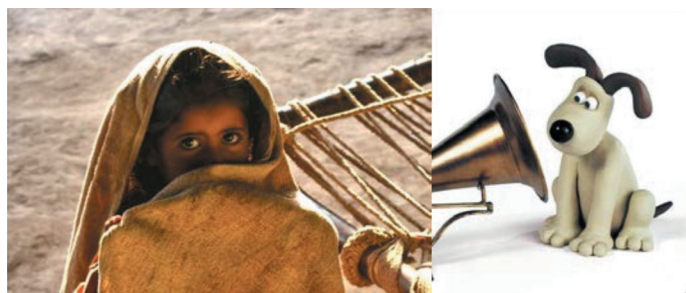
“We need a banking and financial system that helps us make decisions that last as long and stand as tall [for 1,000 years] as this little tree...”

What if you had 45 seconds with Pope Francis?



Data speak for the poor, the planet

A clear message of Bankers, Impact Investors and others at the Vatican



Sketching a Nutrition Facts Label for Catholic Finance

Uniapac assembled in Rome to move from Inequality to Inclusion:

Dear Pope Francis,

Business people gathered at this congress, worried about the need to **create inclusion** in the economies where we operate, for workers that generates labor opportunities. We recognize that in the past decades there has been a strong growth in the number of people who have been "expelled" from the productive sphere in several parts of the world. These are the "marginalized" you mention in your Encyclical.

For business leaders to take charge of this call, there is a need to discuss in depth how to create more opportunities for more people to participate and benefit from the economy; How to improve the lives of low-income groups so they are not just consumers of products and services but also producers using underutilized talents and skills.

Entrepreneurship and innovation are fundamental for the development of an inclusive and sustainable economy.

Time has come to "break the chains poverty chains", that forest of impediments whose nature is political, social, economic and cultural.

We must reflect on the best ways to create a working environment based on the reciprocity between solidarity and subsidiarity, in which people can be its own agents to achieve a **better quality of life**. We believe that the most effective way out of poverty is the promotion of decent work, basement of responsible entrepreneurship, innovation and a justly paid productive work. As business leaders, we must continue our efforts to ensure that those **values that unite us: justice, solidarity, respect for human dignity and the common good**, are reaffirmed and incorporated

>>>

into the daily practices of our companies. We must evolve towards **an inclusive and sustainable economy that develops human dignity through the joint efforts of governments, civil society and the business community.**

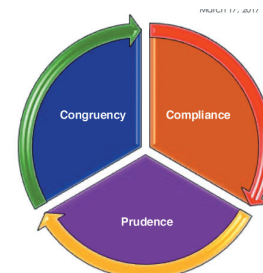
This is our goal and commitment.

José Maria Simone
Uniapac International President
Rome 17-11-2016

A framework for faith-congruency

Storytelling money™ aware of ancient wisdom captured as religion.

- **Compliance** - Legal standards
- **Prudence** - Market return standards
- **Congruency** - Ethical standards



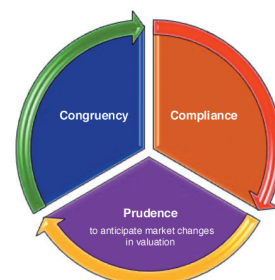
▪ Compliance

- Upgrade Catholic funds management practices to international accounting and regulatory standards,
- Proactively assist institutions led by Catholics to comply with legal and regulatory accounting and reporting requirements,
- Build a list of Compliance Risks that Catholic Institutions face and should look to manage.



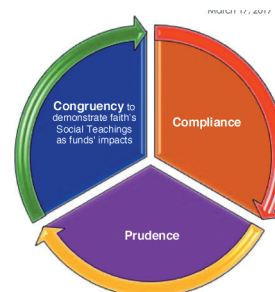
▪ Prudence

- Tag assets and funds flows with their real world impacts so as to react to economic, environmental, health, social and other factors affecting market valuation of Catholic portfolios,
- Take long view of industry transformation,
- Find intersection for social responsibility in identifying transformation leaders & laggards,
- Use Internet of Things, and other sources of "Big Data" to forecast trends.



▪ Congruency

- Assure that the financial practices and impacts of Catholic institutions align with faith's teachings, to serve as an exemplar for other global banks and financial managers
- Invite Catholic bankers, investment managers, institutional financiers and other finance professionals to pioneer the means to benchmark congruency and divergences from Catholic Social Teaching
- Create financial incentives for congruency

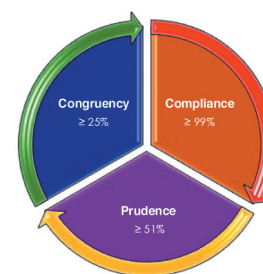


Benchmarks for faith-congruency

Storytelling money™ aware of ancient wisdom captured as religion

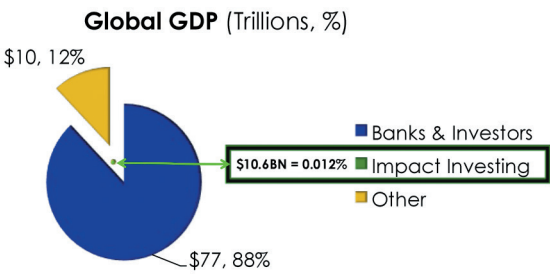
Catholic Funds Benchmark - Performance Targets by 2020?

- **Compliance:** ≥ 99 % legally compliant
- **Prudence:** ROI ≥ 51 % of comparable investment funds – keep pace with market
- **Congruency:** ≥ 25 % of managed investments or business operations report their environmental & social impacts



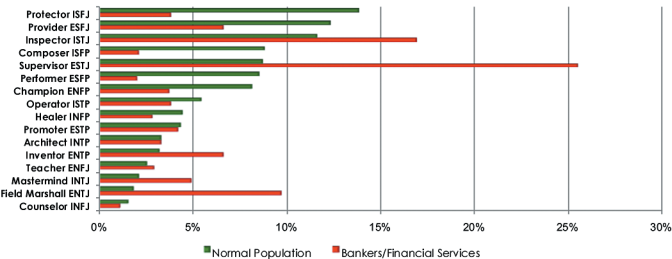
Why focus on Banking & Finance?

Global Market Sizing



Bankers are not normal personalities

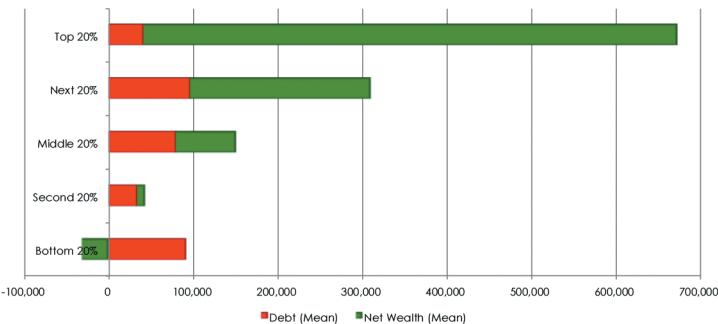
Myers-Briggs Personality Types
(% in normal & banker populations)



Fairness

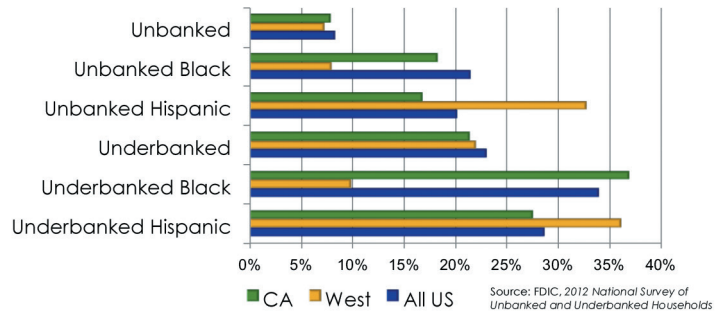
Inequality: Tiers of Household Wealth & Debt (2011)

Source: US Census Tables 1 and 2

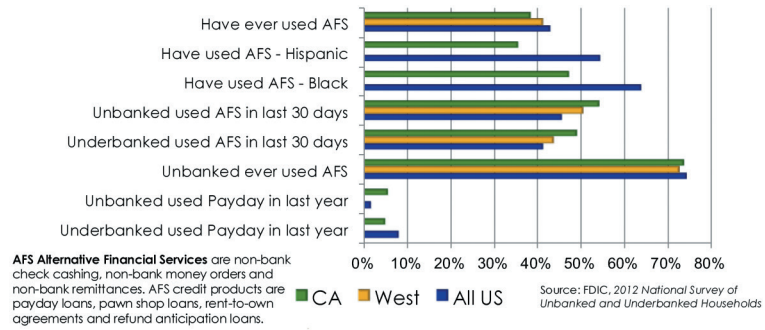


ANNEXE #05

Reduce Unbanked/Underbanked



Displace Alternative Finance



FICO ignores human stories

Cash flows reveal impacts, beyond historical credit use & repayments



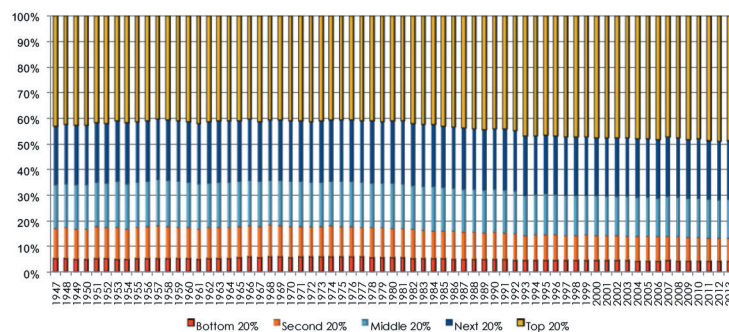
Inequality in U.S. is unsustainable

Q: Could bank data analytics + Impacts + FinTech reduce inequality?



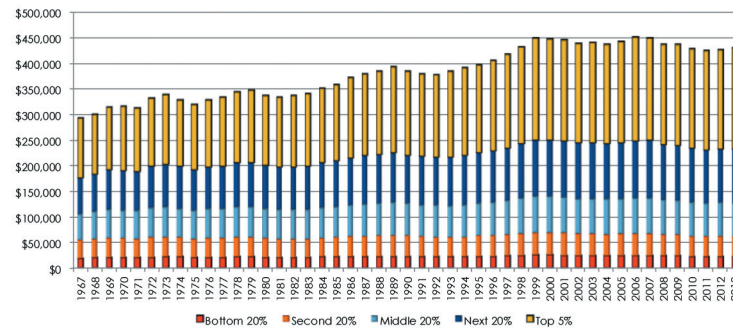
Inequality: 5 Tiers of Household Income 1947-2013

Source: US Census Table F2



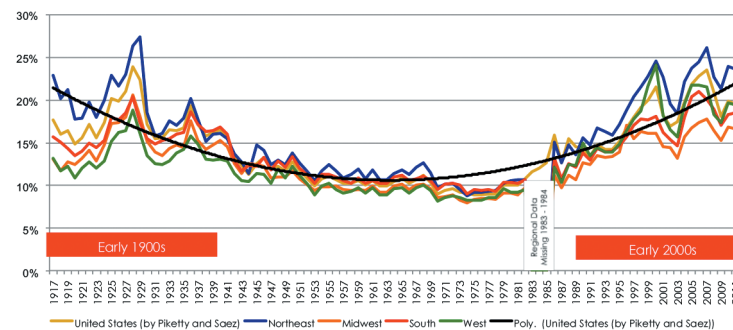
Inequality: Tiers of Household Income 1967-2013

Source: US Census Table H1



Inequality: Share of Income earned by Top 1 %

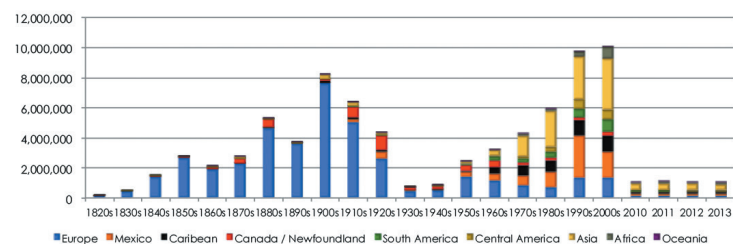
Source: Economic Policy Institute The Increasingly Unequal States of America
Income Inequality by State 1917 to 2011



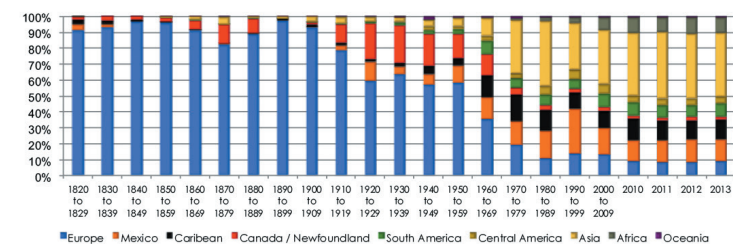
US is the land of immigrants

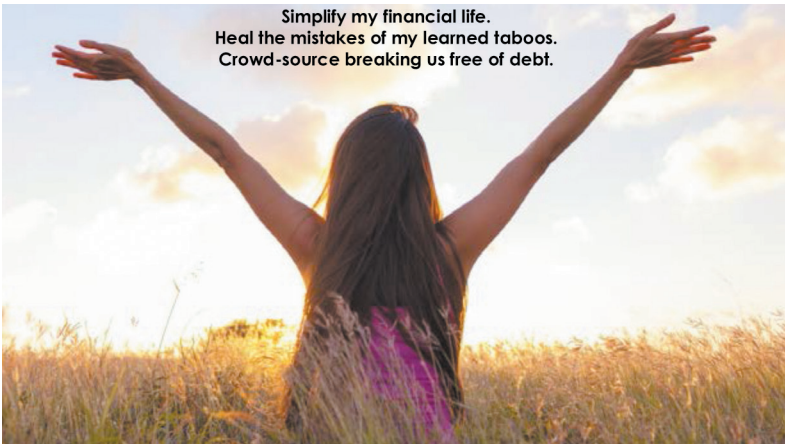
How are banks meeting or abusing immigrants' global financial needs?

Immigration to US by Continent/Country 1820 - 2013 (Source: DHS Yearbook of Immigration Statistics 2013)

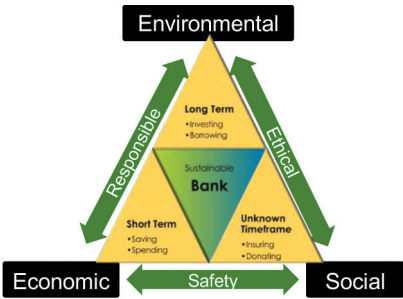


Immigration to US by Continent/Country 1820 - 2013 (Source: DHS Yearbook of Immigration Statistics 2013)





Operating system redesign
for Sustainable Banking



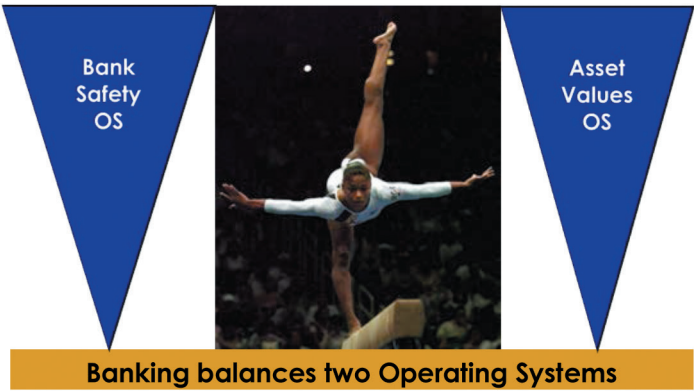
Show you help people

Relevance Takeaway: Help people needing financial help

Getting back to basics

Safety, real economic valuation, fairness, impacts

Safety

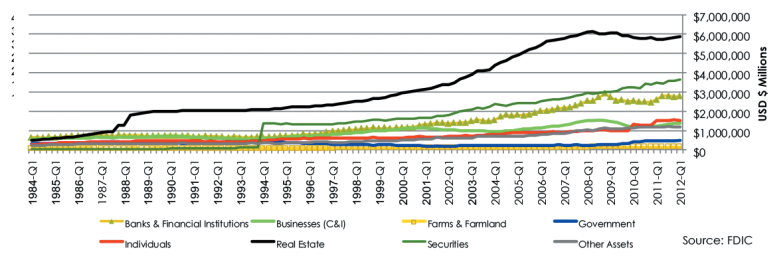


Bankers stay far away from Impacts



Wild Swings in U.S. Bank Loan Growth = not a great new normal

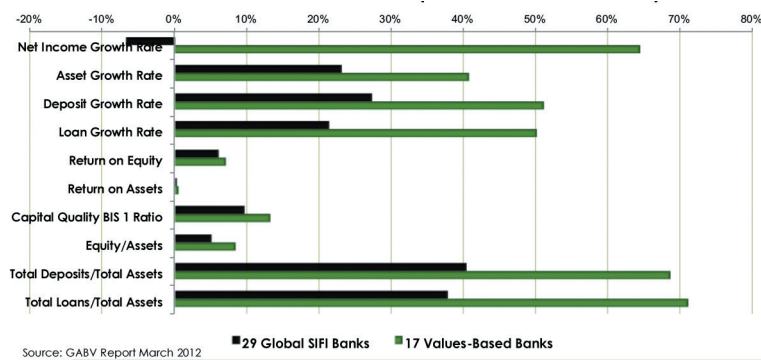
U.S. Banks' Asset Classes Held
1984 - 2012



Sustainability makes banks safer

Idea: Could AI FinTech be safer, fairer, more impactful?

Sustainable banks can be safe, profitable and trustworthy

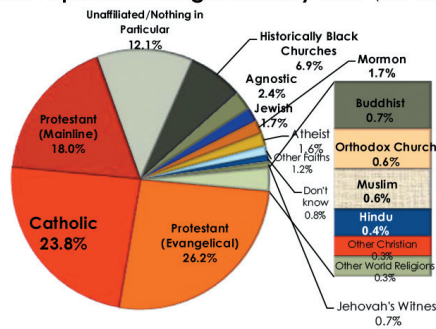


Source: GABV Report March 2012

Impacts

Show Impacts People Care About

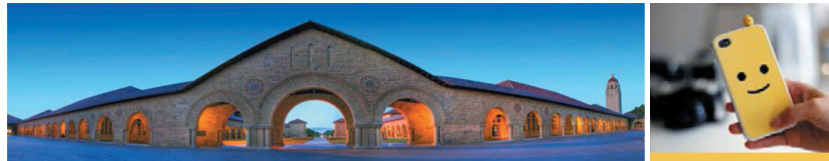
U.S. Population Religion Survey 2007 (Pew Foundation)



Redesigning banking

Storytelling money™

An example of what science-based banking can do...

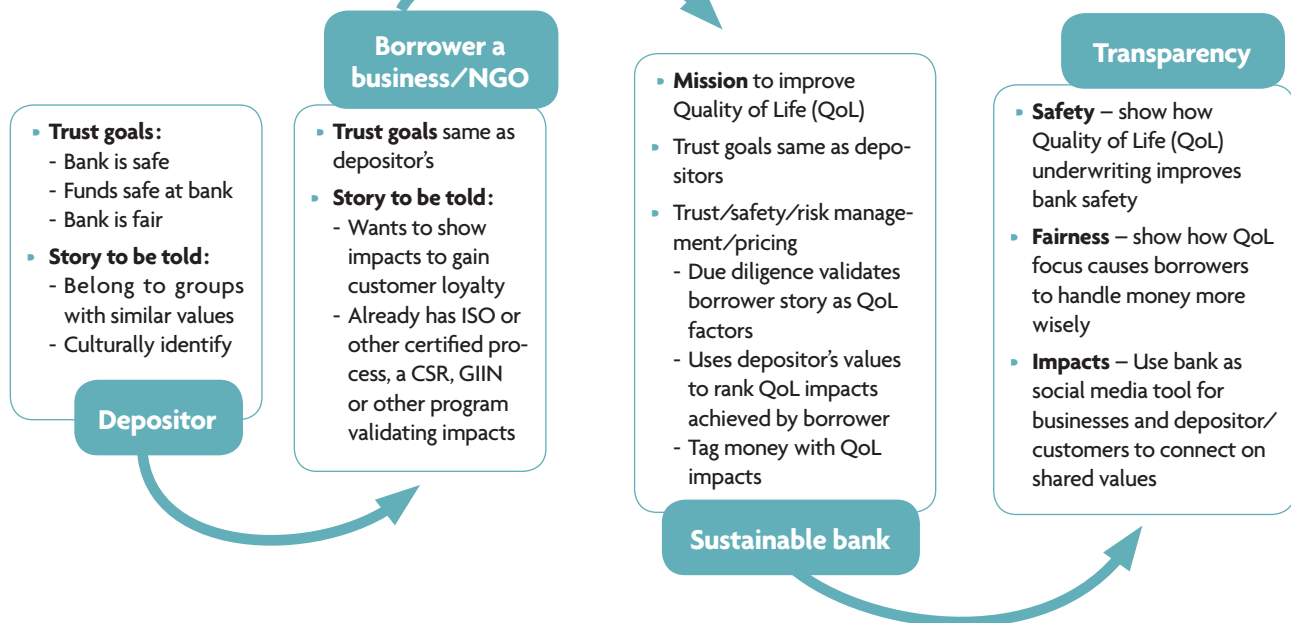


Creating storytelling money™

A process of daily information flows.

Stories worth telling

Stories tagged to be heard



Better Storytelling: Periodic Table of Impacts

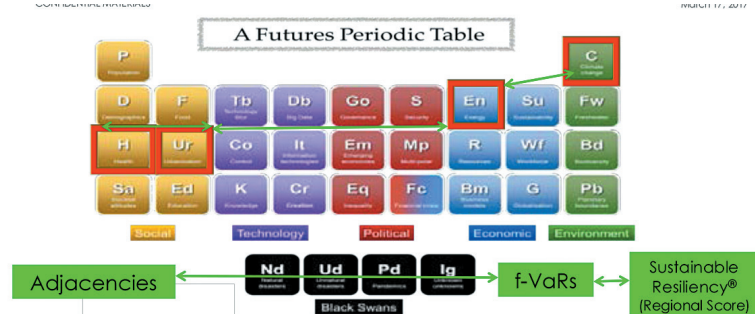
Impacts we measure, plus space for impacts we've yet to see

Impact metrics are evolving

Semantically name, translate and combine impact measures

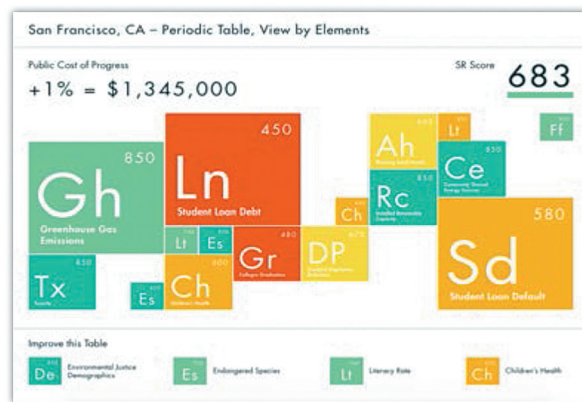
Periodic Table of Quality of Life (QoL)

Every Financial Transaction impacts
functional Values at Risk (f-VaRs)



Leverage the power of adjacency to visualize proportional impact

The Periodic Table, as a metaphor, is a powerful one in this context as it conveys the building blocks of my values as indicated through my financial activity. Yet, it takes the metaphor to a different level by infusing proportion and proximity as extra layers of analysis.



Users can adjust their view of the Periodic Table from a birds eye to a category

The birds eye view lets me see everything but the category view restricts the lens to show me what is around me from this new vantage point, being on the ground as opposed to high in the air.



Quality of Life Elements as Data Analytics improve Asset Value OS & Bank OS Safety

- **Leverage Quality of Life Clusters:**
 - Environment, Health and Water Quality
 - Education, Economic Development and Poverty Alleviation
- **Leverage QoL intersections' to reduce Financial risks:**
 - Smarter Buildings that adapt to Climate Change and Reuse
 - Healthier Workers earn more, improving Consumer Credit Scores
 - Poverty interventions reduce Consumer Loan Default Contagion
 - Reducing Poverty improves Homeland Security

Safety + Transparency + Impacts

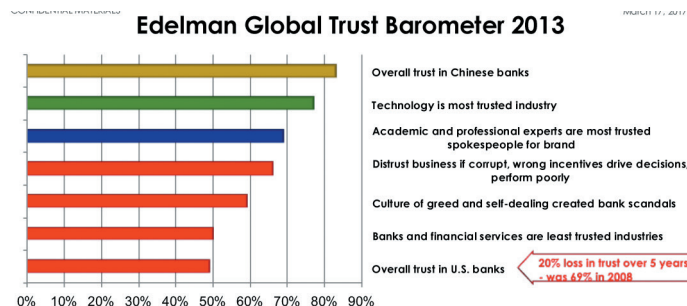
Imagine Banks that are trustworthy

Banks are not showing their relevance to customers' lives

Trust

Banks need to earn back public trust

Impacts can be transparent, building public trust.



NPS for Selected Financial Brands - 2016

Financial Brand	NPS Score
USAA	81
American Express	75
Chase	70
Bank of America	65
Wells Fargo	65
Capital One	52
Chime	52
Royal Bank of Scotland UK	45
Indirect Bank of Australia	45
Indirect Bank of Australia	38
Indirect Bank of Australia	32
Indirect Bank of Australia	29
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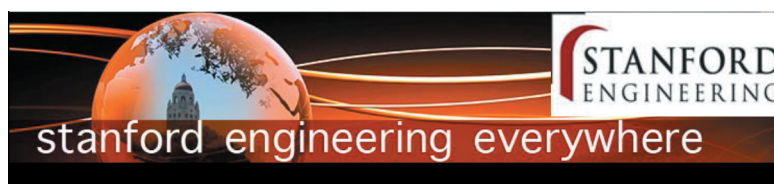
NPS for Selected Brands in US - 2016

Brand	NPS Score
Tesla Motors	96.6
Costco	82
Amazon	69
Virgin	66
Apple	63
Google	53
Honda	49
BMW	40
Hyundai	39
Kia	39
Mercedes-Benz	39
Audi	37
Nissan	35
Toyota	33
EFL - Poland	32
Volkswagen	28
Ford	28

A composite image consisting of two side-by-side panels. The left panel shows a woman wearing a brown headscarf, looking over the edge of a large, textured brown object, possibly a bag or a piece of furniture. The right panel shows a cartoon dog with a light green body and dark brown ears and nose, sitting next to a large, brass-colored gramophone horn.

Category	Percentage
Congruency	≥ 25%
Compliance	≥ 99%
Prudence	≥ 51%

Starting with how the Church handles its own funds, their impacts and performance



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Bruce Cahan and his nonprofit Urban Logic, Inc. conceived, designed and described GoodBank™(IO) and its constituent technology, user experience design, underwriting and other elements prior to, and through research and funding separate from, his affiliations and appointments at Stanford University. Such copyrighted and patentable intellectual property are and remain solely that of Mr. Cahan and Urban Logic.

Mr. Cahan conceived of establishing a Sustainable Banking Institute at Stanford University during the course of discussions with Stanford Professor Michael Lepech at Stanford. Such copyrighted and patentable intellectual property was created by Mr. Cahan and Dr. Lepech and is governed by the Stanford University Research Policy Handbook.

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THE UNIAPAC FOUNDATION 2010-2015 IN SHORT

Thanks to the generosity, trust and commitment of 22 donors and patrons in Europe and Latin America, the UNIAPAC Foundation, which was created in 2010, has rapidly developed its activities with three main priorities:

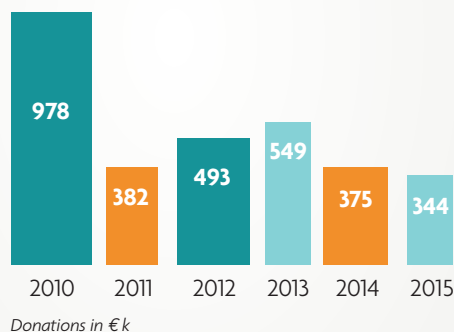
To bring to the fore, to pool and to implement innovative ideas pertaining to the purpose of the economy and business management, such as the implementation of social accountability anchored in the human aspect of business, through the fundamental needs of the men and women who are employed.

To support and reinforce Uniapac's worldwide network

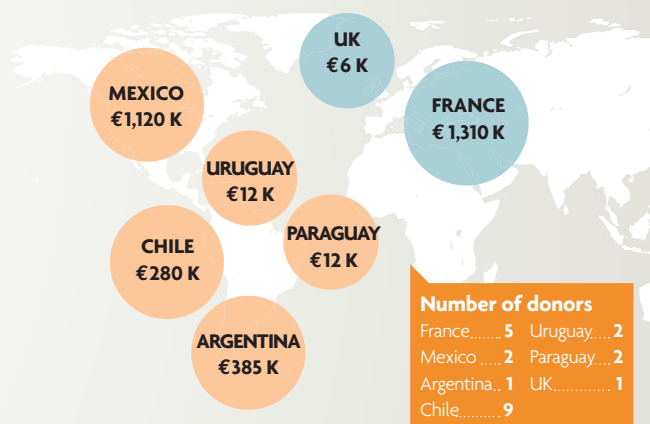
whilst bringing the network's convictions and practices to the attention of major international institutions, as was the case when we worked with the International Labour Office to include "decent work" in the United Nations' post-2015 agenda.

To meet the training and transformation needs of the 15,000 business leaders around the world, in all sectors of the economy, who strive every day to create an economy that promotes Human Dignity and the Common Good.

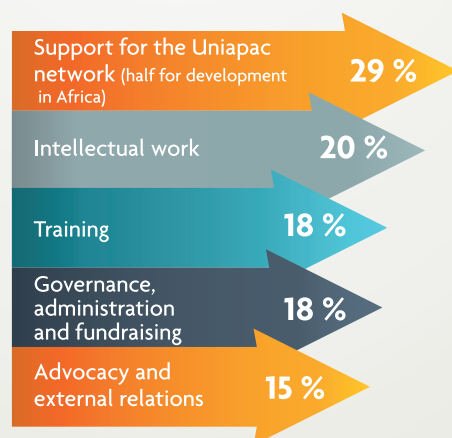
CONTRIBUTIONS TO THE UNIAPAC FOUNDATION: €3.12 M collected between 2010 and 2015



2010-2015 DONATIONS PER COUNTRY



SINCE 2010, THE UNIAPAC FOUNDATION HAS DEPLOYED €2.87M



SUMMARY OF THE UNIAPAC FOUNDATION'S ACTIONS

- 15 Research projects undertaken
- 5 International Think-Tank sessions
- 6 Works published
- 16 Opinion Series published
- 13 Uniapac Associations created in Africa, plus 3 currently being institutionalised in Asia
- 50 Participation in seminars and international conferences