




Investing to address **Climate Change**

November 2015

GENUS
FOSSIL FREE INVESTING



According to the Responsible Investment Association, Canadian sustainable investments under management grew to over \$1 trillion in 2014, and since 2009, global sustainable assets more than doubled to over \$45 trillion. One reason for this explosive growth is that more and more investors are recognizing environmental, social and governance issues are financially material. In fact, a growing body of evidence suggests that sustainable investing can help enhance both portfolio safety and returns.

A PRIMER ON CLIMATE CHANGE

Climate change and its resulting impact is one of the most onerous issues to face our world today, and has created tremendous challenges for governments, businesses, investors and even carbon (oil, gas and coal) producers. Already, we have witnessed more than two decades of discussion and debate about the reality, and subsequent effects, of a warming planet — starting with the Earth Summit held in 1992 by the United Nations Framework Convention on Climate Change (UNFCCC). It was here, in Rio de Janeiro, that nearly all the world's nations agreed on a need to stabilize greenhouse gas (CO₂) concentrations.

“Climate change is one of the greatest challenges of our time.”

United Nations Climate Change Conference 2009

Some 17 years later in 2009, more than 100 major world leaders at the United Nations Climate Change Conference in Copenhagen named climate change as “one of the greatest challenges of our time.” More significantly, they committed to limiting global warming to no more than 2°C above pre-industrial temperatures¹. Beyond this level, the UNFCCC and other experts believe there will be irreversible and potentially catastrophic climate change that will impact coastal regions, food production, water supplies and more.

Since global warming is already underway (the average global temperature has risen 0.85°C since pre-industrial levels) experts now believe the planet can't afford a temperature increase of more than about 1.2°C above today's level. According to the European Commission on Climate Action, “To stay within this ceiling, the scientific evidence shows that the world must stop the growth in global greenhouse gas emissions by 2020 at the latest, reduce them by at least half of 1990 levels by the middle of this century and continue cutting them thereafter.”

¹ United Nations Climate Change Conference - Copenhagen, December 2009. http://unfccc.int/meetings/copenhagen_dec_2009/meeting/6295.php



About 60 to 80% of all proved coal, oil and gas reserves will have to stay in the ground to meet global CO₂ emission targets set by the international community.²

Thus far, attempts to slow the steep climb in global greenhouse gases have failed despite concerted efforts by some countries, notably in the European Union. In fact, scientists at NASA report that levels of CO₂ in our atmosphere have now reached 400 parts per million — the highest levels ever recorded.

THE INVESTMENT RISK OF STRANDED ASSETS

In order to keep global warming below the 2°C benchmark, organizations such as the United Nations, the International Energy Agency, the World Bank and the Organization for Economic Co-operation and Development, believe that about 60 to 80 percent of all proved coal, oil and gas reserves are going to have to stay in the ground — essentially “stranded.”² Since energy reserves are a key part of fossil fuel companies’ valuations, this creates a future of uncertainty and potential devaluation risk.

Are Fossil Fuels Responsible for Climate Change?

In the words of the United Nations Framework Convention on Climate Change (UNFCCC), these are the indisputable causes of climate change:

- The concentration of greenhouse gases in the earth’s atmosphere is directly linked to the average global temperature on Earth;
- The concentration has been rising steadily, and mean global temperatures along with it, since the time of the Industrial Revolution; and
- The most abundant greenhouse gas, carbon dioxide, is the product of burning fossil fuels.

² Unburnable Carbon – Are the world’s financial markets carrying a carbon bubble? <http://www.carbontracker.org/wp-content/uploads/2014/09/Unburnable-Carbon-Full-rev2-1.pdf>

“Fundamental changes in the environment could affect economic and financial stability and the safety and soundness of financial firms, with clear potential implications for central banks.”⁶



A comprehensive study by the financial think-tank, Carbon Tracker Initiative, states: “Currently, financial markets have an unlimited capacity to treat fossil fuel reserves as assets. As governments move to control carbon emissions, this market failure is creating systemic risks for institutional investors, notably the threat of fossil fuel assets becoming stranded as the shift to a low-carbon economy accelerates.”⁴

Conservative estimates for the financial worth of these potentially unburnable carbon reserves have ranged from U.S. \$20 trillion to U.S. \$27 trillion.⁵

Conservative estimates for the financial worth of these unburnable carbon reserves have ranged from \$20 trillion to \$27 trillion. Any associated write-down of fossil-fuel company valuations could very easily dwarf the recent U.S. \$2 trillion housing meltdown.⁵

This threat has generated concern among the world’s central banks with Bank of England governor Mark Carney warning that fossil-fuel investors focused on short-term profits are not pricing in this reality – a phenomenon he calls a “tragedy of horizons.”

Research released by the Bank of England in February 2015, reviewed the role of central banks in addressing the risks of climate change and warned that: “Fundamental changes in the environment could affect economic and financial stability and the safety and soundness of financial firms, with clear potential implications for central banks.”⁶

The Bank of England recommended that central banks start to consider the impact of a changing climate, not only on insurers, but also on financial markets and the economy as a whole.

⁴ Unburnable Carbon – Are the world’s financial markets carrying a carbon bubble? <http://www.carbontracker.org/wp-content/uploads/2014/09/Unburnable-Carbon-Full-rev2-1.pdf>

⁵ “Institutional Pathways to Fossil-Free Investing, Endowment Management in a Warming World,” Joshua Humphreys, May 2013.

⁶ One Bank Research Agenda Discussion Paper, February 2015, <http://www.bankofengland.co.uk/research/Documents/onebank/discussion.pdf>

The financial risks posed by stranded assets not only include the devaluation of carbon stocks, but could cause major energy producers to experience faltering productivity, major job losses, falling profits and poor economics, made worse by competition from renewable energy sources.

In Canada, while oil has historically produced strong returns, in this changing economic landscape, it may no longer be a good bet. Even before the precipitous drop in the price of crude through 2014 and into 2015, three major oil sands projects were shelved in 2014 as a result of market access constraints, public opposition, and soaring project costs. Since then, many others have been pushed to the margins of profitability.

COAL: THE WORST OFFENDER TAKES THE MOST HEAT

There are also growing risks of stranding in the electrical sector with mounting evidence that the decade-long boom in global coal demand is peaking. According to analysis published by Yale's School of Forestry and Environmental Studies, this is mainly caused by changes in the Chinese economy, where energy efficiency is improving, renewable energy emphasis is growing, and public anger about smog is forcing the shutdown of coal-fired power plants in Beijing and elsewhere. "This trend was reinforced by the reciprocal climate deal that China struck with the Obama administration in November 2014, under which China agreed to peak its carbon dioxide(CO₂) emissions by 2030 and put a cap on coal burning by 2020. In fact, some analysts now predict that Chinese coal burning could begin to decline as early as 2016." ⁷



⁷ Pearce, Fred. "Could Global Tide Be Starting To Turn Against Fossil Fuels?" Yale Environment 360. N.p., Jan. 2015. Web. 5 Aug. 2015.



This is significant because, according to the U.S. Energy Information Administration (EIA), China currently burns half of the world's coal and is responsible for more than 80 per cent of the growth in global coal burning since 2000.

In the U.S. and other developed countries, base load power sources like coal and nuclear are being replaced by renewables. In time, some believe the fossil fuel powered electrical grid could become obsolete. This is reflected in the financial markets where, for example, Barclays in May 2014 lowered its ratings on high-grade corporate bonds across the entire U.S. utility sector, citing the disruptive threat posed by solar power and storage.

RENEWABLES: THE GROWTH OF DISRUPTIVE TECHNOLOGY

In October 2013, the Economist magazine reported that in Europe, growth in renewable energy was the primary reason the top 20 utilities had lost €500 billion in market value since 2008.

According to the International Energy Agency (IEA), renewable energy generates 23 percent of global electricity today, and its capacity doubled from 2000 to 2012. Solar demand is now growing at a rate of 30 percent per year and is rapidly becoming cost competitive with fossil fuels. These economic changes have had a huge effect on European utilities. In October 2013, the

Economist magazine reported that in Europe, growth in renewable energy was the primary reason the top 20 utilities had lost €500 billion in market value since 2008. "The decline of Europe's utilities has certainly been startling. At their peak in 2008, the top 20 energy utilities were worth roughly €1 trillion. Now they are worth less than half that." ⁸

⁸ "Europe's electricity providers face existential threat," The Economist, October 12, 2013. <http://www.economist.com/news/briefing/21587782-europes-electricity-providers-face-existential-threat-how-lose-half-trillion-euros#b1Y0qRgPoyOPjTVp.99US>

In markets ranging from Germany and the United States to India and Brazil, wind or solar power have reportedly reached cost parity with fossil fuel-powered generation. Only the perpetuation of heavy state subsidies — estimated by the IEA at more than half a trillion dollars a year — has maintained the primacy of fossil fuels.

A report produced by Carbon Tracker Initiative states: “The utility death spiral has called into question the old utility business models. Renewable energy technology, environmental and air quality concerns, and evolving customer needs are transforming the production and consumption of electricity.”⁹

DIVESTING: SHIFTING VALUES CREATE PUBLIC PRESSURE AND REPUTATIONAL RISK

As noted in KPMG’s 2014 report, *Investing in the Future*, environmental awareness and expectations of transparency, have continued to grow and are becoming increasingly important with respect to purchasing behaviour. As this relates to investing, families and organizations are becoming more interested in aligning their investment portfolios with their values. With respect to fossil fuels, values-driven investors want to ensure their money is not funding activities that are contributing to climate change.

Investment activism, also driven by values, is another strong and growing motivation for divestment. This happens when stakeholders pressure their institutions to sell investments related to issues of concern, with the goals of increasing financial pressure and public awareness. One of the most well-known example of divestment occurred in the 1970s and ‘80s in response to apartheid in South Africa, where many pensions and endowments divested from holdings in issuers that supported this oppressive and discriminatory policy.

“ Given the health impacts of fossil fuels, we have to take a stand. “

Dr. Courtney Howard, CMA Member.

Recently, environmental organizations such as 350.org have been campaigning against fossil fuel companies in Canada, the US, Australia and Europe. So far, they’ve had some notable success. In 2014, the Church of Sweden announced that its \$691 million portfolio was now completely free of fossil

fuels. The World Council of Churches, which represents about 590 million people in 150 countries also divested in 2014. Then in May 2015, Norway’s sovereign wealth fund — the world’s largest at \$900 billion — chose to divest from more than \$8 billion in coal-related investments.¹⁰ The divestment movement was given a further boost in September 2014 when the Rockefeller Brothers Fund, created by heirs to the Standard Oil fortune, announced it would work “as quickly as possible” to take all its money out of fossil fuels.

⁹ “Coal: Caught in the EU Utility Death Spiral”, http://www.carbontracker.org/report/eu_utilities/

¹⁰ “Norway confirms \$900bn sovereign wealth fund’s major coal divestment,” The Guardian, <http://www.theguardian.com/environment/2015/jun/05/norways-pension-fund-to-divest-8bn-from-coal-a-new-analysis-shows>

Here at home, the Canadian Medical Association, BC Government Service Employees Union and the United Church of Canada all committed to undertaking divestment efforts in August 2015. During her address to the CMA general council meeting in August 2015, Dr. Courtney Howard, a board member of the Canadian Association of Physicians for the Environment, stated: “Given the health impacts of fossil fuels, we have to take a stand.”

GENUS RESPONDS TO CLIMATE CHALLENGES WITH SOLUTIONS TO HELP INVESTORS

As a firm, Genus is dedicated to creating innovative solutions that better meet changing client needs. Back in 2011, our socially responsible investment clients became increasingly concerned about climate change and financing fossil fuel companies. To ensure a better fit with our clients’ values, Genus began divesting from oil sand companies across its Socially Responsible Fund Family. Then in early 2013, we removed all companies with direct involvement in the extraction, processing and transportation of oil, gas and coal.

Our Fossil Free Funds contain zero fossil fuel reserves, which eliminates the associated risks of stranded assets.

Today, we offer Canada’s only Fossil Free Fund Family with solutions that include money market, fixed income and stocks. We also offer portfolios of Fossil Free Funds that tactically manage asset class exposures to help further increase returns and reduce risk. These funds contain zero fossil

fuel reserves, which eliminates the associated risks of stranded assets. Our Fossil Free Equity Funds are committed to continually achieving a carbon emissions intensity that is 70 per cent lower than the market as a whole. A 2014, study published by the Responsible Investment Association of Canada, found that our funds met “the criteria to place in the most robust subcategory of Fossil Fuel Free products.”

GENUS FOSSIL FREE FUND FAMILY

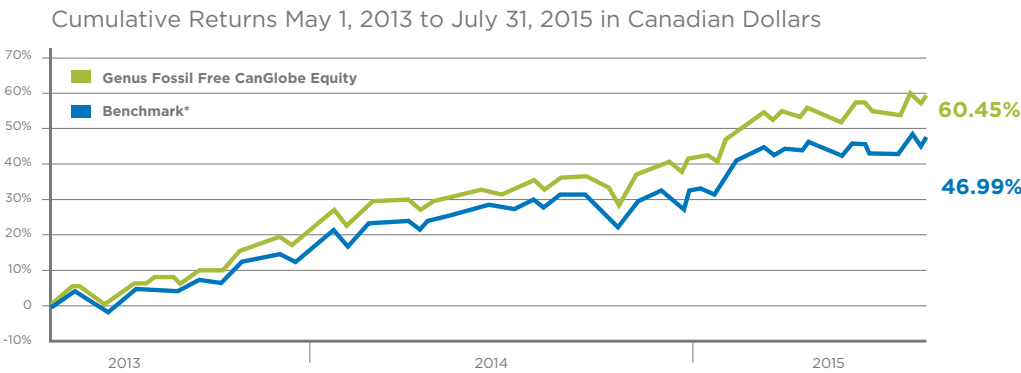


HOW MIGHT DIVESTING AFFECT INVESTMENT PERFORMANCE?

As an investor, if you wish to address climate change, our sustainable investment solutions can help you eliminate fossil fuels from your portfolio without sacrificing return potential. While many investors believe removing energy stocks from their portfolios causes lower returns and higher risk, the evidence suggests otherwise.

Since launching our benchmark-focused Fossil Free CanGlobe strategy in May 2013, our “total equity” approach has served us well. The chart below shows the funds’ performance compared to the markets as a whole.

GENUS FOSSIL FREE LIVE PERFORMANCE



* Benchmark: MAY 1, 2013 – March 31, 2015 40% S&P/TSX, 30% S&P 500, 30% EAFE April 1, 2015 35% S&P/TSX, 65% MSCI World Source: Genus

Our experience achieving strong returns through fossil free portfolios is in keeping with findings of other research as well. S&P Capital IQ modelled the performance over the past decade of the S&P 500 index stripped of its fossil fuel stocks. The study found that a US \$1 billion endowment invested in a carbon-free S&P 500 would have yielded an additional \$119 million in profit through 2013. The same conclusion was reached by San Fransisco-based investment firm, Aperio Group, who determined that if investors had divested from fossil fuels 20 and 30 years ago, they would have had slightly higher returns within the global and US markets, with no significant difference in risk.

FOSSIL FREE PERFORMANCE COMPARISON

	GLOBAL		U.S.		CANADA	
	Fossil Free	Index	Fossil Free	Index	Fossil Free	Index
ANNUALIZED RETURNS	6.84%	6.53%	10.68%	10.63%	9.23%	8.38%
STANDARD DEVIATION	16.65%	16.55%	14.14%	14.81%	21.15%	21.14%
	1996 - 2014		1988 - 2014		1999 - 2014	

Standard Deviation: Annualized

Source: Aperio Group, LLD Building a Carbon-Free Equity Portfolio 2014

ENERGIZING YOUR PORTFOLIO WITHOUT ENERGY STOCKS

We recognize that divesting presents a challenge for Canadian investors, since major extractors, transmitters and emitters of fossil fuels constitute approximately 30 per cent of the value of our stock market. However, with Canadian equities representing only five per cent of world markets, looking beyond our borders offers more opportunities that meet our stringent fossil free criteria. From a broader global viewpoint, the energy sector and its related industries account for only eight per cent of the MSCI World Index.

With Canadian equities representing only about five per cent of world markets, looking beyond our borders offers more opportunities that meet our stringent fossil-free criteria.

At Genus, our fossil free equity funds combine Canadian and global stocks into a single optimized strategy that emphasizes top industries in each region. This approach also helps us fill the energy gaps with strong companies in other economically sensitive sectors.

OUR ENERGY REPLACEMENTS



INFORMATION TECHNOLOGY



CONSUMER DISCRETIONARY



FINANCIALS



TELECOM SERVICES

Our primary fossil fuel “replacement” investments currently include companies in the global Information technology sector, consumer discretionary and financial sectors. This ‘total equity’ approach, coupled with our modern portfolio risk management technology, is how we make fossil free investing work for Canadians.

HOW DO WE APPROACH SUSTAINABLE INVESTING?

Our approach to sustainable investing is comprehensive in scope and encompasses five key tactics:



1) Exclude Risky Products — Products and services that negatively impact the environment or society can also result in financial liabilities and unsustainable business models. Therefore, to help avoid investment risk, we start by eliminating unsustainable products and services from our universe of potential investment candidates.

2) Avoid LOW ESG — In addition to screening out risky product categories, we also avoid companies across all industries that are involved in significant ESG controversies. Research from Deloitte found that in each of the past three decades, investors have responded more strongly to negative ESG news. Furthermore, given the growing societal interest in sustainability and transparency, we expect financial market focus on ESG performance to expand further.

3) Integrate High ESG — While ESG can be useful in risk mitigation, we also have found it has merits if used positively to help identify better investment opportunities. In fact, a Harvard Business School study found that companies that included sustainability in their business strategies tended to achieve superior stock market returns,¹¹ while a Deutsche Bank report showed that high ESG ratings led to a lower cost of capital. At Genus, we try to capture the portfolio benefits of these effects by combining high ESG scores with other financial rankings when determining which stocks to buy for our portfolios.

¹¹ Robert G. Eccles, Ioannis Ioannou, and George Serafeim, Harvard Business School: "The Impact of a Corporate Culture of Sustainability on Corporate Behavior and Performance, Working paper". November 4, 2011



WE SCREEN OUT ESG RISKS



Environmental Risks

Do the company's operations interact negatively with land, air or water?



Social Risks

Does the firm's value chain impact worker safety and human rights?



Governance Risks

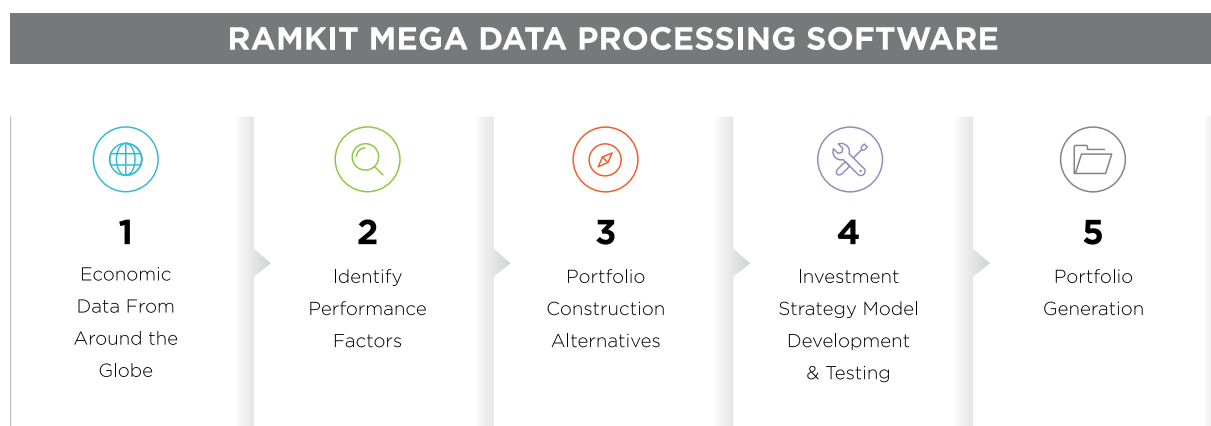
How is the company managed around executive compensation, diversity and board independence?

4) Shareholder Action — As owners and managers of significant capital, we work with our clients to help positively influence business activities that occur in the economy. Our shareholder action programs seek to catalyze industry improvement, and we do this through proxy voting, management communication and shareholder resolutions. Each of these programs is designed to use our power as shareholders to change how companies are run and to increase levels of corporate social responsibility. With respect to shareholder action, Genus is quite unique in that our clients can collaborate with us to shape program objectives.

5) Sustainable Thematic — Our sustainable thematic approach seeks to find and profit from the long term trends that are unfolding. For instance, at Genus we look at population growth and how it may affect demand for scarce resources such as food, water and energy. Since supporting life for more people will increase the strain on our planet, we like to thematically emphasize products and services that offer sustainable solutions to these challenges. We believe in the concept of win-win and have determined that sustainable

economic global growth can only occur if the benefits are shared more equally among everyone. As such, we strive to tackle areas of inequality such as access to education, healthcare, financial services and technology. At Genus, our sustainable thematic strategy is very unique since it aims to add financial performance while helping to expand positive social and environmental impact globally.

GENUS' ESG INVESTMENT ADVANTAGE



Knowledge is power, and in the information age it's essential to have a systematic way to gain insights from the mega data available. Over the past 25 years, we've built and continued to enhance our leading-edge investment research and analysis platform called Genus RAMKit. This proprietary software equips us to collect and continually interpret vast amounts of new information from many sources around the world. Through RAMKit, we can find determinants of performance, integrate ESG scores, develop and test asset allocation strategies, and explore new security selection and portfolio construction techniques.

RAMKit maintains continually updated economic, market and stock data from around the globe. Through this system, we've found over 300 proven investment factors and used them to develop more than 60 investment models. RamKit enables Genus to continually improve and execute sound strategies for our clients.

AN INNOVATIVE LINEUP OF SUSTAINABLE SOLUTIONS

Genus offers a range of unique solutions to meet the new needs of sustainable investors. Each of the following portfolios can be customized to further improve the fit:

GENUS FOSSIL FREE MULTI-MANAGER PORTFOLIOS — bring together our expertise in developed market stock selection and asset allocation with the complementary skill-set of our institutional-quality sub-advisor, Addenda Capital. Based in Montreal, Addenda is recognized as one of Canada's leading bond houses. They skillfully manage our high-quality fixed income mandates that can include green, corporate and government bonds.

Our Fossil Free Multi-Manager Portfolios can be customized in a number of ways. Firstly, investments can be set up to match specific needs for income, growth, liquidity and capital preservation. For those who want a tactical approach, we can proactively tilt portfolios toward the most attractive asset classes, and away from areas that present more risk. We can also tailor the safety and yield characteristics of your holdings through our industry leading fossil free, low-volatility, high-dividend mandate.

GENUS “BEST OF THE BEST” FROM AROUND THE WORLD — Genus Fossil Free CanGlobe and Fossil Free Dividend strategies leverage our “total equity” approach to help maximize diversification risk-adjusted returns. These stock mandates combine Canada and the rest of the world into a single optimized strategy that emphasizes top industries in each region. They are invested in about 35 per cent Canada and 65 per cent global (MSCI World Index) and are tilted toward the most attractive countries on a monthly basis. Our Fossil Free CanGlobe strategy seeks to maximize exposure to our highest-ranked stocks with market-levels of risk, while our Fossil Free Dividend strategy provides better income and safety.

GENUS IMPACT EQUITY STRATEGY — Thematic, mission-based investing is another significant growth area in sustainability. The Genus Fossil Free Impact Equity Fund seeks to make positive social and environmental impacts in addition to generating better financial returns. This mandate focuses on investing in global companies who are leaders in areas of sustainability, such as: renewable energy; energy efficiency; water



and waste management; low negative impact products; sustainable agriculture; as well as innovative companies in the healthcare, education and technology sectors. This global mission-based investment mandate is one of a kind in Canada.

For investors who wish to go beyond divestment, our Impact Equity Fund provides an opportunity to be a part of the solution by investing in sustainability leaders. While withdrawing capital can help limit negative climate activities, it's equally important to help contribute to renewable energy alternatives. Fortunately, we are starting to see positive shifts in this direction. For example, a 2015 report by Clean Energy Canada found that, "With respect to clean energy investment and development, this past year proved Canada's best ever. Investment in new clean energy approached CAD \$10.7 billion — a healthy 88 per cent bump over 2013."

CONCLUSION

Although climate change is a major concern, at least awareness and understanding of its causes are on the rise. It's now scientifically clear that fossil fuels, and their associated greenhouse gas emissions, are primary contributors to the problem. As investors, we can now make a difference by limiting funding to damaging activities while increasing financing for climate change solutions. At Genus, we've taken care to build a full range of fossil free solutions to help Canadian families and institutions address these issues.

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Genus is dedicated to creating innovative solutions that better meet changing client needs.



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