THE ADAPTING MOSAIC
Solving Global Problems in the Age of Disruption
HELPING CHILDREN RUN WITH THEIR DREAMS.

John Deere is committed to the next generation of innovators. Through John Deere Inspire, we promote education in science, technology, engineering, and mathematics (STEM) to empower children around the world to reach their greater potential.

Our support of hands-on programs like FIRST LEGO® League, Project Lead The Way, and Introduce a Girl to Engineering Day challenges youth to hone their collaboration, problem-solving, and critical-thinking skills — so they can one day create solutions to feed, clothe, and shelter a growing population.

Learn more about how John Deere Inspire and our other citizenship programs improve living standards for people everywhere — visit Deere.com/Citizenship.
ABOUT THE MAGAZINE
Over the last 28 years at PYXERA Global, we’ve found that bringing diverse parties together to address key challenges works.

Today, we aim to convene players from across sectors to address the complex global issues outlined in the United Nations Sustainable Development Goals. The PYXERA Global Engagement Forum provides a multidimensional space to share and discuss these approaches—through dynamic online content and stories, informational resources, live events, and print publications like this one.

Truly effective tri-sector collaboration is hard work and we hope to provide a common space to make those engagements a little easier.

Thank you for joining us as readers and contributors in elevating the ways in which individuals, corporations, and social enterprises champion a better future for our world.
Contents

06

The Adapting Mosaic
DEIRDRE WHITE

08

It's Time to Re-humanize Philanthropy
JACOB LIF

20

Fostering Student Interest and Inclusion to Close the STEM Gap
REBECCA BELL MESZAROS

24

The Human Factor
ALEXANDRA VAN DER PLOEG

27

Eliminating Marine Debris
SOLVABLE PROBLEM DEFINITION

36

Contextualizing Global Energy Poverty
KATE STEEL

38

In Myanmar, Building Prosperity and Progress through Renewable Energy
CORINNE REILLY

41

Reducing Post-Harvest Loss
SOLVABLE PROBLEM DEFINITION
12

Five Ways to Make International Development More Agile
RICHARD CRESPIN & BETH SKOROCHOD

16

The Challenge for Business and Society
STANLEY S. LITOW

19

Closing the Skills-Gap in STEM

28

From Straws to Sea Change
MATT PRINDIVILLE

32

Bag the Bag; Save a River
LAURA ASIALA

35

Ending Energy Poverty
SOLVABLE PROBLEM DEFINITION

42

A Nigerian Farmer Creates Her Path to Progress
MATTIE HILL & ELLIE JORGENSEN

44

To Reduce Post-Harvest Loss, Start with a Sustaining End in Mind
STEVE SONKA, RAJSHREE AGARWAL & SONALI K. SHAH

48

Launching Serbia into the Digital Age
MARIJA DEMIROVIĆ
THE ADAPTING MOSAIC—Solving Global Challenges in the Age of Disruption

In this age of disruption, the complexity of our global challenges forces us to treat them like moving targets, where any adaptive response needs to triangulate across all three sectors—government, business, and nonprofits—like a GPS for sustained progress. When we fully map the problems we confront, we must recognize that in our interconnected world, the biggest challenges facing us today are borderless. For the borders that do exist, they cannot matter the way they once may have.

I am reminded of one of the “four futures” developed as part of the UN’s Millennium Ecosystem Assessment in 2005. These four future scenarios envisioned for humanity are Global Orchestration, where a globalized economy emphasizes efficient allocation of resources and growth, similar to our current paradigm; TechnoGarden, where a globalized world relies on technological fixes to substitute for diminishing natural resources; Order from Strength, where isolated, regionalized economies prioritize national security and fend for themselves; and Adapting Mosaic, a future where economic activity of regional populations is not tied to political boundaries; instead, it is limited to the natural boundaries of their geographies such as a watershed, a desert, or a grassland environment.

In the Adapting Mosaic future, confining economic activity in this way challenges populations to live within the ecological constraints of a single type of landscape, like the Chesapeake Bay watershed for example, where Washington, DC is located. Watershed residents would survive and thrive in this environment by safeguarding upstream benefits, managing downstream waste flows, and adapting. They are obliged to own the sustainability challenge. What is compelling about this idea is not the unlikely reframing of political borders, but accepting that context is key to sustainability.

In this issue of the Global Engagement Forum Magazine, we turn our attention to a selection of problems that are the focus of the Global Engagement Forum: Live this October. These are challenges that are solvable in our lifetimes, but can only be solved if we think about borders and boundaries in new ways, accepting the limitations and embracing the opportunities of context.

For instance, food insecurity affects approximately 815 million people, yet one-third of the food we grow—enough to feed twice that many, an additional 1.6 billion—is lost before even reaching the market. The solution lies in a more efficient agrifood value chain, which is well within our reach, if we are able to understand the challenges across the entire ecosystem and bring the best solutions and resources from each sector to address those challenges.

Where marine debris is concerned, we are all aware that we are being overrun by our own waste. Our oceans will soon contain more plastic, by weight, than fish. Yet we have the capability to close the material loop in our economy to eliminate waste as we know it. This will involve not just environmental remediation, but identifying the source of waste, its underlying drivers, and addressing the problem by looking across geographies and sectors at everything from production to usage, recycling, and disposal.

The future also depends on our ability to prepare the next generation workforce, providing more economic opportunity even in an age of automation. When we understand the current and future needs of employers, we can co-create programming with education providers that bridges the STEM skills gap, and helps to meet the demand for qualified job candidates for the digital economy.

Lack of access to energy—or energy poverty—also contributes to lack of economic opportunity, not to mention health risks and pollution. More than a billion people have no access to electricity, and many more do not have easy access to affordable energy. People facing energy poverty spend excessive time collecting fuel, often contributing to deforestation, and don’t have electricity to support economic or educational pursuits. Household and micro-grid solutions exist, and would have only an incremental impact on global emissions, but interests across sectors must align to make energy distribution a priority.

To make progress toward the Sustainable Development Goals, we should feel motivated and inspired by the knowledge that there are solutions within our grasp, however they require us to work and adapt together, in a mosaic of partnership across sectors, cultures, disciplines, regions, and time.

Comment from the CEO, Deirdre White
Opportunity can’t knock if it doesn’t know where you live.

COMPARTAMOS IS A BEST-RUN BUSINESS. In Latin America, millions of people still don’t have a bank account. Compartamos uses SAP® mobile solutions to help bring financial products and opportunities to previously underserved people. So they can use their talents to improve their communities, their country, and their world.

THE BEST-RUN BUSINESSES MAKE THE WORLD RUN BETTER. For more, go to sap.com/opportunity
IT’S TIME TO RE-HUMANIZE PHILANTHROPY

We should be investing in disadvantaged communities in the same way we invest in our own families.

JACOB LIEF

“UBUNTU”

“Africa’s Virtue”

“I am because you are”
BIGGER. Faster. Cheaper. A good way to sell fidget spinners, perhaps, but should the same mantra apply to raising children? Try to count the value of every single thing that got you where you are today—the support of your family, doctor’s visits, the encouragement of teachers—and you will find that it’s nearly impossible to measure.

Yet in my line of work, I’m asked to put a price on parenting every day. Why are your programs so expensive? Is this cost-effective? Do you really need to build another classroom? Somehow, when it comes to disadvantaged children, whether in South Africa or the South Bronx, the question quickly shifts from “How well are we serving this child?” to “How many children can we fund for X dollars?”

It’s time to re-humanize philanthropy.

There is no shortcut for raising a child to become a healthy and happy adult. No innovation or life hack is more effective than that old, proven recipe: stay with a child every day of her life and give her the best you can. Provide her with healthcare, a stable and supportive home, and a quality education. Help her achieve her highest potential and overcome every obstacle.

Changing a life, like parenting, is a full-time job without room for quick-fix solutions.

Yet we seem to be stuck in the echo chamber of a harmful untruth—that privileged children should have everything at their disposal to navigate life while those who are not so fortunate can grow up to be functioning adults with much less and thrive on cups of soup, malaria nets, and windup computers.

We have to be honest about what it truly takes to help children succeed. It’s not anything we don’t already do in our own lives. We plan around big milestones, develop five-year plans, and start college savings accounts at birth, all so our children can have fulfilling lives. Offering a similar safety net to a child growing up in the townships of South Africa shouldn’t be any different. Take the example of a young woman named Siya. At the age of 14, both of her parents died of HIV-related illnesses, forcing her to become the head of her household and take care of her two younger siblings. Siya’s journey, from those seemingly insurmountable odds to stability and eventual success, took a decade, required many interventions, and cost nearly $65,000 in education and health programs.

Don’t get me wrong—the idea of sending our children to elite schools is not what frustrates me. I spoil my own kids rotten. Going to the ends of the earth for our children is a parental instinct that cuts across all social groups. But what baffles me is that in the philanthropic sector and as a society, we have accepted an inferior standard of care for children who live far below the poverty line.

The idea that poor children require the same investments as our own kids to lead healthy, prosperous lives remains radical to this day.

Somehow, when it comes to disadvantaged children, whether in South Africa or the South Bronx, the question quickly shifts from ‘How well are we serving this child?’ to ‘How many children can we fund for X dollars?’
Her graduation day was one of the biggest milestones in her life, a moment that had been years in the making and had happened against all odds.

We made sure she had what she needed—in this case, a dress for graduation.

Contrary to what many funders who measure success by scale and cost-effectiveness might think, this wasn’t wasted money. Can we diminish the impact of a pink graduation dress on a girl who thought she might not even live to finish high school? For most of us (whose lives are set up so that it is harder to fail than to succeed), the years of resilience, hard work, and strength that it took for Siya to get to that point are impossible to imagine.

We have to start investing in disadvantaged communities in the same way that we would invest in our own families.

This means committing for the long haul and recognizing the dignity, complexity, and potential of people we desire to help. Real change won’t happen overnight—and for communities that have suffered generations of poverty and oppression, it may not happen in a lifetime.

“The idea that poor children require the same investments as our own kids to lead healthy, prosperous lives remains radical to this day.”

If there is one lesson I’ve learned from my 19-year journey as a nonprofit founder, it is that nothing is more transformative than investing in a child every day of her life. It’s what my parents did for me, it’s what I do for my own kids, and it’s what we at Ubuntu will continue to do for children like Siya.

Jacob Lief is the Founder and CEO of Ubuntu Pathways (formerly Ubuntu Education Fund), a nonprofit organization that takes vulnerable children in Port Elizabeth, South Africa from cradle to career. The organization was recognized as an honoree for the 2018 Lipman Family Prize, a social impact initiative from the Wharton School of Business at the University of Pennsylvania.
JPMorgan Chase’s Field Service Corps represents the firm’s signature volunteer opportunity for employees and provides an excellent way to engage directly with nonprofits to help them build capacity and increase their local impact.

JPMorgan Chase is proud to partner with PYXERA Global Engagement Forum to advance purposeful global engagement around the world which helps drive inclusive growth.

“At JPMorgan Chase, we aspire to be a positive force in society and to help solve some of the biggest challenges that our communities face. In addition to providing financial capital, we have been leveraging the talent and expertise of our employees in order to strengthen the ability of our nonprofit partners — from the South Bronx to East London to Detroit — to make an impact on the lives of the people who are still being left behind.”

— PETER SCHER, Head of Corporate Responsibility & Chairman of the Mid-Atlantic Region, JPMorgan Chase & Co.
Five Ways to Make International Development MORE AGILE

Solving the world’s tough, but solvable, problems requires new levels of social innovation. But many social innovation approaches require retooling funder mindsets and business models.

Imagine you work for a large international nonprofit, tackling some of the world’s most intractable health problems in some of the most difficult environments. Your team and your donor loved it when you proposed—and won funding—to apply a new social innovation approach to an issue that has seen only incremental change over five decades. Working with outside experts in this approach, you are in the midst of deep engagement with the target beneficiaries, trying to gain empathy for their situation and uncover insights you’ll translate into interventions. It’s going well and your team feels on the cusp of discovering something truly novel. Then it all falls apart.
The donor calls and wants to see what you’ve implemented, uncomfortable with any more time spent in the field without results. They want to see the numbers demonstrating the impact of this new approach. The consultants, aghast, demand more time and refuse to ‘cut corners’ and start designing solutions before they have what they need. Your team, now disappointed, was learning a new approach, and while it wasn’t always easy to shift their thinking, they felt they were getting somewhere, engaging with beneficiaries in ways they hadn’t before. The beneficiaries, who previously felt empowered to design their own solutions, now feel abandoned and excluded.

You try to hold it together, balancing the potential of this new approach with the donor’s demands, your team’s capacity, and ultimately the best solution for your target beneficiaries. But in the end, you return to a more traditional approach—gathering your team to quickly generate ideas and get interventions in the field. You need to show uptake and not lose your funding.

This scenario gets played out in similar ways all across the international development field. Increasingly, development actors have turned to social innovation approaches, often born in the private sector, to disrupt traditional ways of thinking. The appetite for Lean Startup, Agile, Human-Centered Design (HCD), and Collective Impact keeps rising. But despite consensus that the world’s stickiest, most wicked problems require these types of new thinking and social innovation, most donor processes simply don’t accommodate them. There is a disconnect among the contracting, funding, and technical mechanisms of development grants that renders them fundamentally at odds with these new ways of thinking.

THE PRINCIPLES OF SOCIAL INNOVATION

In his article, ‘Rediscovering Social Innovation,’ James Phillips defines social innovation as “a novel solution to a social problem that is more effective, efficient, sustainable, or just than existing solutions and for which the value created accrues primarily to society as a whole rather than private individuals.” Whether employing the process of HCD or the discipline behind Lean Startup, social innovation approaches plucked by development actors share a few common bonds.

1. **They are problem-driven.** For example, rather than designing a program around a clever new floating garbage bin that picks up ocean trash but that coastal communities can’t afford to maintain, these approaches would begin instead with a deep examination and definition of the marine debris issue in the context of the communities most impacted by it, designing around the problem rather than a predetermined solution.

2. **They are user-centric and empathetic.** To address the issue of post-harvest loss, programmers might immerse themselves in farmers’ day-to-day lives to see firsthand their issues of storage and transport before designing solutions rooted in the needs and context of the farmer.

3. **They are inherently collaborative,** forging partnerships across sectors, technical disciplines, program teams, and perhaps most importantly, between programmers and beneficiaries.

4. **They are iterative and adaptive with a focus on testing and learning.** A new clinic experience for couples seeking HIV testing might be prototyped in several communities using reactions and feedback from couples to refine the clinic before broader testing. Each loop of testing, learning, and adaptation makes the solution more relevant and increases actual use.

5. **They are tolerant of ambiguity and failure.** Non-linear, iterative processes allow for flexibility and change within the design process, and a focus on creating desirable solutions means that some may fail. Approaches demand a flexible environment where failing fast and learning is celebrated, not punished.
BARRIERS TO INNOVATION

While social innovation approaches seem poised to take over the field of development, as the opening scenario showed, there are obstacles to these approaches achieving their full potential. Some of the very same components that set these social innovation approaches apart present challenges to making them work.

Their iterative nature creates tension with more traditional approaches.

Traditional design requires an upfront detailing of risks, benefits, activities, and outcomes. Social innovation approaches resist pre-defined solutions, following a non-linear path — looping through cycles of design, testing, learning, and adaptation — making measurement more challenging.

Their pace and cost of implementation are not well documented or understood.

Multiple iterations often mean increased time in the field and increased transaction costs. Practitioners argue that this additional time and cost ensures solutions are tested, resonate with users, generate buy-in, lower risk, and ultimately save time. But these longer design periods make donors nervous because they seem to delay the time to impact.

Increased collaboration can also mean increased confusion and lack of accountability.

The uncertainty that exists in the early stages of a social innovation process can extend to uncertainty among the players about their roles. As projects make more concrete decisions, donors and implementers must communicate about the roles of all involved, what will be delivered, by whom, and when.

RECOMMENDATIONS TO HELP INNOVATION FLOURISH

To harness the potential of social innovation approaches, traditional donors, private foundations, bilateral donors, and others funding development work must rethink their own structures and expectations to enable better outcomes.

1. Align contracting, financing, and technical objectives of all awards.

Donors have invested in getting their technical and program officers up to speed in understanding these new innovative approaches, but it appears that little investment has been made to educate the contracting and finance officers who approve and oversee them. To align agreements to these new approaches, the technical, financing, and contracting components must be harmonized and all staff supporting awards must understand the concepts and principles behind social innovation approaches. The first steps in aligning the structure and scope of grants to the processes of social innovation are training all key staff and ensuring they are included in the conversation.

2. Support a flexible environment for iteration, failure, and learning.

When employing approaches where trial and error are critical to learning and improving ultimate solutions, the “f” word cannot be taboo. Failure is a part of innovation and donors must learn to celebrate it. This shift requires donors to create a safe space for implementers to share failures and learnings, rewarding not the fall but the recovery. This must be translated into contractual language that supports “ pivots”—the quick recovery and adaptation after learning from an initial test.
Contract adaptable theories of change instead of upfront logframes.

The principles of these approaches simply won’t allow for the predetermined outputs and activities required in traditional M&E plans typically developed at the proposal stage. Rather, projects could begin with a hypothesis or theory of change that can be adapted as insights are generated. If donors can shift their expectations, accepting and contracting for a theory of change upfront with the expectation that a formal monitoring, evaluation, and learning plan will be delivered after prototyping, the process can retain its flexibility and adaptation, while still delivering on M&E.

Consider new funding and procurement models and timeframes.

While cost-plus-fixed-fee contracts are commonly used among traditional donors, deliverable-based models may provide more flexibility to use social innovation approaches. Impact bonds, pay for performance, or fixed-price awards could provide space for adaptation and iteration since they focus more on impact and less on process and hitting linear milestones.

Donors must revise their expectation that projects will begin implementation immediately. Some donors have experimented with 3–6 month inception periods, allowing organizations to dig into the problem, identify target audiences, and engage them to generate insights before proposing interventions. Other donors have considered a two-phased approach with “Phase 1” concentrating on a relevant problem definition, defined target audience, and intervention concepts. “Phase 2” finalizes interventions and implements them. The phases could have separate awards or bring together two different consortia. These shorter timeframes and clear deliverables also support deliverable-based pricing instead of cost-plus-fixed-fee.

Use backbone organizations.

To succeed, these approaches require consistent coordination, communication, and collaboration among project stakeholders. Saddling one implementer with these tasks can cause problems across a consortium. Instead, a separate backbone organization should coordinate stakeholders as the project transforms and adapts. The backbone organization can manage reflection points with stakeholders, including donors and beneficiaries, and can ensure detailed documentation of the process.

CONCLUSIONS AND NEXT STEPS

If donors truly want to take advantage of all these innovative approaches have to offer, they will need to adjust their business processes to align technical, financial, and contractual requirements. As it stands, most donor contracting and finance officials are incentivized on disbursement, not impact. By making the adjustments recommended above, donors will better align their processes and behaviors to achieve the impact they seek and better position themselves and their implementing partners to succeed and change the world in lasting ways.

Richard Crespin is CEO of CollaborateUp, a consulting firm advising businesses and nonprofits on how to work together to solve big problems. Beth Skorochod is Director of Practice at CollaborateUp.
Stan Litow’s new book, *The Challenge for Business and Society: From Risk to Reward* published by John Wiley & Sons, presents a fact-based assessment of the role that corporations have played in society both historically and currently and perhaps most important, offers a road map for a more promising future.

The genesis of Stan’s book was the current round of criticism of business, some justified and some not, from both the left and the right as being the cause of all societal ills from income inequality to the shredding of the social safety net and stable employment. Stan uses the lens of history and fact, as well as his deep cross-sector experience, as opposed to rhetoric, to provide a clear assessment of how the private sector, government, and civil society might work together to address some of the most daunting, critical challenges facing society, and do so in a more scalable, and sustainably effective way.

*Read the following passage from the book’s introduction.*
For those who knew me well at the beginning of my career, my writing a book about corporations and their role in society would really be odd. I began my professional career in the mayor’s office in New York City, and after four years of helping shape city policy and managing the largest public-service internship program in the country, I founded and led a not-for-profit think tank and community advocacy organization. Following that I served as deputy schools chancellor, helping lead the nation’s largest school district through a period of turbulence. My experience in city government, education, and not-for-profit enterprise expanded my views on public policy and provided knowledge on issues like education, but a deep knowledge of corporations was not among my assets. I basically saw the private sector as just another funder for my reform ideas. I lacked substantive knowledge about the private sector. Of course, that all changed when Lou Gerstner, then IBM’s CEO, while leading a massive corporate turnaround, recruited me to IBM to lead corporate citizenship. In over two decades, and under the leadership of three IBM CEOs, I’ve gained intimate knowledge of the private sector and specifically its role in society. That is why the most recent U.S. presidential election sparked my interest in writing this book.

The 2016 presidential campaign focused a good deal of attention—overwhelmingly negative—on the role of corporations in society. Big companies were accused of a range of sins—profiteering, plundering the environment, ignoring (even exacerbating) societal ills ranging from illiteracy and discrimination to obesity and opioid addiction. Income inequality, a particularly contentious and divisive issue, was laid squarely at the doorstep of billionaires and the private sector. Wall Street, in particular, was a convenient target for the blame for growth in income inequality, by contrasting the lack of growth in wages with the growing number of billionaires.

But the angry rhetoric hardly stopped at Wall Street, and wasn’t restricted only to financial services. Quite the contrary; companies with manufacturing plants outside the United States were criticized for sending jobs abroad, companies that cut jobs in the United States, even in the face of declining revenue, those that embraced or created technology that could eliminate jobs. In fact, while some of the criticism was justified, nearly all companies were vilified regardless of whether their behavior justified it.

At the same time, there is another side. President Donald Trump, who joined in a good deal of the criticism of the private sector during the campaign, shifted. He moved federal policy and rhetoric in a totally different direction. He got rid of fiscal, social, and environmental rules that purportedly hobbled business, reduced or shut down cabinet offices historically protecting the public good, and rolled back clean power, consumer protection, civil rights, and living wage and healthy eating initiatives, and he endorsed moving basic public funding from public to private schools—all in the spirit of addressing the need for private-sector job growth and a reduced public-sector role. The privatization of public services seems to have gained renewed interest from some in government, including expanding the privatization of the military. While some view this positively, it may have another effect, exacerbating the negative views held by increasing numbers of Americans who see corporations, especially large corporations, in a decidedly bad light.

To many, this ushers in a new era of “cowboy capitalism.” Big companies, unfettered by regulation, encouraged by the presidential bully pulpit, are freed up to go about the business of making money—no matter the consequences.
to consumers and the commonwealth. If there is little or no growth in wages, especially among those on the wrong end of the income inequality spectrum, we can expect the negative rhetoric, coupled with demonstrations and community actions, to escalate. If history tells us anything, this new era will stimulate a countereaction at the state and local levels. This would certainly not be the first time a period of corporate ambition led to a negative reaction. In the 1920s, corporate behavior led to the worst financial crisis America had ever seen, with the Great Depression, resulting in the onset of the New Deal in the 1930s, which increased governmental authority over business. In fact, America’s views about corporations wax and wane. Efforts to over-regulate in the 1970s led to the election of Ronald Reagan and a very different set of actions during the 1980s.

Where are we today? Frankly, it seems like a train wreck waiting to happen. But we do have a choice. We always do. We can simply sit back and let it all unfold before our eyes, or instead, beginning with a fact-based assessment of history and reality, we can actively participate in efforts to balance the growth of business with the needs of society to produce genuine shared benefit.

Some corporations, freed from regulations, will abuse the public trust. Others will respond effectively in their communities and with their employees, investing more, not less, in social and environmental areas, working hand in hand with local and state governments and non-profits to address societal challenges, especially the critical issues of education and job creation. How many will act this way and how they do it will be the major issue—whether there are one-shot efforts to counter bad behavior by others, or instead systemic solutions; whether they are scalable, sustainable, and a model for others. While President Trump has promised to reduce “foreign aid,” some big companies might actually do the opposite, and step up efforts to engage with communities around the world, not just in the United States, assisting in job creation, poverty alleviation, and improvements in education and health.

Some might choose to address the growing jobs and skills crises. They may do this for a range of reasons, such as to impact their bottom line, advantage civil society, engage employees, and reflect positively with their shareholders. But the motivation for this action will be critically important. Some will see it as in their business interest to focus on actions designed to impact favorably on society. Others will see it as core to their corporate culture, values, and beliefs, understanding its value in attracting and retaining top young talent. Some will combine both, and hopefully influence others.

Excerpted with permission of the publisher, Wiley, from The Challenge for Business and Society: From Risk to Reward by Stanley S. Litow. Copyright (c) Stanley S. Litow 2018. All rights reserved. This book is available at all booksellers.
Despite the global value placed on education, learning focuses on the skills a community most easily understands. Society, our families, and institutions push students into four-year degrees from colleges and universities; communities try to keep their young grounded with the traditional skills they know and trust; education systems struggle to keep STEM interesting to secondary school students; and many companies are still reluctant to employ individuals without a technical degree.

The new gig economy may help change the way we think about work as more formerly full-time employees move to a more project-focused approach to earning an income. In classrooms from Austria to Zambia, teachers are looking at how to translate STEM theories into practical workplace skills. Vocational courses that build both technical know-how and the soft skills of being a great employee are starting to appear in curriculums. Employers too are becoming more adaptable as they assess the portfolio of skills they require and the opportunity to retrain versus retrench.

SOLVABLE PROBLEM

CLOSING THE SKILLS GAP IN STEM

Why is today’s workforce ill-prepared for employment opportunities in STEM, as employers struggle to fill jobs in these areas?

PROBLEM

Who hasn’t wished, as they stare at a blank computer screen, that they had the skills needed to solve even the most basic technical issue? Given these skills are often key to the life we lead today, there is more to be done to engender either a love, or an aptitude, for STEM.

Employers around the world need analytical thinkers and problem solvers, yet they struggle to find qualified candidates for entry level positions, much less advanced or mid-career positions. Employers have jobs available with no one to do them.

SOLUTION

Despite the global value placed on education, learning focuses on the skills a community most easily understands. Society, our families, and institutions push students into four-year degrees from colleges and universities; communities try to keep their young grounded with the traditional skills they know and trust; education systems struggle to keep STEM interesting to secondary school students; and many companies are still reluctant to employ individuals without a technical degree.

The new gig economy may help change the way we think about work as more formerly full-time employees move to a more project-focused approach to earning an income. In classrooms from Austria to Zambia, teachers are looking at how to translate STEM theories into practical workplace skills. Vocational courses that build both technical know-how and the soft skills of being a great employee are starting to appear in curriculums. Employers too are becoming more adaptable as they assess the portfolio of skills they require and the opportunity to retrain versus retrench.
Fostering Student Interest and Inclusion to Close the STEM Gap

Inequality hinders innovation. The key to closing the STEM skills gap lies in both reaching and engaging groups of youth.

REBECCA BELL MESZAROS
For a country that has historically thrived on innovation, the United States may now be losing out on generations of innovators in science, mathematics, technology, and engineering. These innovators are essential to bridging the skills gap in STEM: an estimated 3 million STEM jobs in America are unfilled because there are not enough qualified workers to fill them.

Meanwhile, six out of ten children aren’t learning the minimum required in reading and math. In classrooms across the country, only 16 percent of high school students are proficient in math and express an interest in STEM fields.

Among students who do score well in math and science, there are large disparities in innovation by socioeconomic class, race, and gender, according to a study by the Equality of Opportunity Project. Innovators from low-income backgrounds who excelled at math are less likely to hold patents than their counterparts who come from higher-income families but did substantially worse in school. White children are three times more likely to become inventors than black children, and only 18 percent of inventors are female.

Many of these students from underrepresented backgrounds become ‘lost Einsteins’—academically talented people who would have had high-impact inventions had they become inventors. Looking at the STEM workforce, blacks represent nine percent of workers and Hispanics represent seven percent. Although women represent half of the STEM workforce, they are vastly underrepresented in engineering and computer science fields.

Creating opportunities for students who have been traditionally underrepresented in STEM could boost innovation and economic growth immensely. According to an Equality of Opportunity Project study, “If women, minorities, and children from low-income families were to invent at the same rate as white men from high-income families, the rate of innovation in America would quadruple.”

Yet to close the skills gap, it’s not just about fostering hard STEM skills. It’s about casting a wider net and ensuring there are mixed opportunities for all students to engage in the STEM pipeline along the way. By creating a learning environment where every student has an opportunity to create, disparities to innovation among underrepresented groups can be reduced. And young people can ignite their interest in STEM fields while gaining what they need to succeed on the path to employment in STEM careers. 

‘Lost Einsteins’ — academically talented people who would have had high-impact inventions had they become inventors.
SU󰈑PORT PRO󰈏ECT-BASED LEARNIN󰈌.
To stay engaged, students need learning opportunities beyond traditional brick and mortar educational approaches. That’s where project-based learning comes in. It requires students to apply what they learn in the classroom to real-world challenges, giving tangible meaning to abstract equations and preparing students for academic, personal, and career success.

Project-based learning is effective for students of different backgrounds, including disadvantaged urban school populations. Project-based learning initiatives play a role in motivating students to pursue STEM careers, especially for women, minorities, and children from low-income families.

Schools can boost innovation by supporting project-based learning to give students more opportunities to collaborate with other peers interested in inventing. In the World Smarts STEM Challenge, high school teachers and students from different countries work together on gender-balanced, collaborative teams to create the best STEM solutions to global problems.

The challenge not only builds skills in innovation, problem solving, and cross-cultural collaboration, it also increases opportunities for diverse students to gain the skills and confidence needed to be successful in STEM careers. Before the challenge, 94 percent of students had never worked with students in another country, and 65 percent of US teams were from high-poverty schools. Overall, the challenge increased more than 90 percent of students’ enthusiasm for STEM subjects.

Here are three practical ways to expand access to innovation and increase student interest in STEM:

1 SUPPORT PROJECT-BASED LEARNING.
To stay engaged, students need learning opportunities beyond traditional brick and mortar educational approaches. That’s where project-based learning comes in. It requires students to apply what they learn in the classroom to real-world challenges, giving tangible meaning to abstract equations and preparing students for academic, personal, and career success.

Project-based learning is effective for students of different backgrounds, including disadvantaged urban school populations. Project-based learning initiatives play a role in motivating students to pursue STEM careers, especially for women, minorities, and children from low-income families.

Schools can boost innovation by supporting project-based learning to give students more opportunities to collaborate with other peers interested in inventing. In the World Smarts STEM Challenge, high school teachers and students from different countries work together on gender-balanced, collaborative teams to create the best STEM solutions to global problems.

The challenge not only builds skills in innovation, problem solving, and cross-cultural collaboration, it also increases opportunities for diverse students to gain the skills and confidence needed to be successful in STEM careers. Before the challenge, 94 percent of students had never worked with students in another country, and 65 percent of US teams were from high-poverty schools. Overall, the challenge increased more than 90 percent of students’ enthusiasm for STEM subjects.
2 CREATE OPPORTUNITIES FOR VIRTUAL EXCHANGE.

Virtual exchange is important for young people because it builds their global competence and technology literacy. To innovate and be successful in their STEM careers, students need skills in cross-cultural communication and technology. Virtual exchange can increase access to meaningful global exchange for students who lack the financial resources to study abroad.

By breaking down stereotypes students may have about other countries through collaboration and relationship-building, virtual exchange can create meaningful connections between classrooms and foster global fluency. Communicating across cultures in order to create a product is challenging, so learning flexibility, openness, and patience is incredibly important in the process. In the working world, people across industries need these skills in order to create high-quality products and services while building respectful workplaces.

Virtual exchange can support STEM workforce development in the United States and abroad, especially as global industry challenges require collaboration across borders. Through programs like Global Solutions, US and Jordan postsecondary students work together virtually to innovate and solve authentic, real-world challenges while developing much-needed 21st-century skills and enduring connections across regions and cultures.

3 ENCOURAGE DESIGN CHALLENGE THINKING.

Design challenge thinking gives a solution-based approach to problem solving by challenging assumptions and identifying alternative strategies throughout the process. Utilizing a human-centered approach to innovation, design challenge thinking can transform results through unique and creative techniques that yield out-of-the-box thinking.

By incorporating design challenge thinking into program design, students and teachers can investigate an issue and create innovative solutions. In addition to inspiring students to innovate, design challenge thinking also helps students learn essential 21st century skills.

Tailoring opportunities in project-based learning, virtual exchange, and design challenge thinking to diverse student backgrounds is important not just to reduce disparities, but to inspire student innovation and increase economic growth across the country and the world.

Preparing students for the real world, these opportunities enhance students' skills in innovation, problem solving, and global citizenship that can lead directly to employment in STEM careers. This can be especially valuable as earnings of STEM workers continue to outpace those in other jobs—the average STEM worker earns about two-thirds more than someone in a non-STEM occupation.

Regardless, STEM education is vital for our future—not just to close the skills gap or support economic opportunity—to prepare youth for a world that is increasingly connected and give them the confidence to create, innovate, and collaborate across cultures to solve real-world problems on a global scale.
As the world’s largest enterprise application software company, it might seem like SAP has it all figured out. Founded in 1972 by five entrepreneurs, the company now serves more than 404,000 customers in 180 countries. Through these customers, SAP is connected to 77 percent of the world’s transaction revenue, 78 percent of the world’s food, and 58 percent of UN member governments. Playing a major role in shaping the modern economy, few multinationals are better positioned to influence how business is optimized for good.
Of course, with growth comes challenges—be it for a business or the world. Sometimes you have to take a step back to move forward. I’d like to take you through our journey, and our struggle, to turn purpose into action and deliver collective impact for our business and the communities that need it most.

Technology’s peril and promise

There have been more advances in technology in the past five years than in the previous hundred. According to the World Economic Forum, 65 percent of children entering primary school today will ultimately end up working in new job types that don’t yet exist. One out of every four workers already admits to a skills mismatch in their current role. The World Bank recently determined that 60 percent of global citizens are not even included in the digital economy! The statistics are both exciting and alarming.

Why does this matter to SAP? Because corporate social responsibility (CSR) isn’t about a team within the company—it’s about the company’s DNA. As Bill McDermott, SAP’s CEO, puts it: we have a moral obligation to initiate people into the modern economy, “regardless of where they come from.” This imperative has taken on a special meaning since 2015, when all 193 United Nations member states adopted Agenda 2030 and the Sustainable Development Goals (SDGs), the culmination of unprecedented collaboration between governments, business, civil society, and citizens. For the first time ever there was a clearly outlined, unified plan to achieve a world without poverty, a healthy planet, and a just, peaceful society for all.

With the convergence of the company’s purpose-driven promise and the SDGs, it was time to implement a proactive, actionable plan to keep people at the heart of digital transformation. Given our long history of CSR, we were aware that part of the solution would be a combination of SAP’s leadership, financial resources, and ecosystem. What we didn’t know was how to leverage these strengths to ensure no one is left behind in the digital economy.

Every organization has its own brand of constraints, and SAP is no exception. “While every department has a specific role, all activities need to be aligned to create the visibility, focus, and agility that define intelligent enterprises,” says Christian Klein, SAP Chief Operating Officer. With 94,000 employees representing multiple departments across 130 office locations, that is sometimes easier said than done. To achieve a company-wide strategy for digital inclusion, we lean in to one of SAP’s five cultural pillars to “build bridges—not silos” and strive to execute beyond organizational boundaries. This is not a siloed CSR program; it’s a business imperative for SAP, our customers, and the world.

Aligning to unite

As demonstrated by the SDGs, there is immense power in partnership and collaboration to solve complex global problems—across geographies, industries, sectors, and even internal departments. Before looking to our external partners, we first needed internal alignment. Understanding the barriers to quality education and workforce readiness for all meant partnering internally first and then moving forward externally as “One SAP”—a united organization.

While it can be a frustrating undertaking to create company-wide alignment and, on the surface, much easier to move ahead in compartmentalized teams, the benefits of bringing everyone to the table are overwhelming. A lengthy process of internal consultation and change management helped us gain a better perspective on what tech innovation means for today’s and tomorrow’s workforce and what is truly keeping everyone from participating. These discussions also led the way to a response that truly fits with our DNA.

In designing our Agenda 2030 strategy, we developed a roadmap to expand quality education and decent work. In internal discussions we agreed our primary consideration was simply to help people become and stay relevant in a digital world. To do this, we needed to translate digital skills into innovation that can be harnessed by organizations and individuals alike. We needed learning for life. 

”

With the convergence of the company’s purpose-driven promise and the SDGs, it was time to implement a proactive, actionable plan to keep people at the heart of digital transformation. “
Enter “Learning For Life”

SAP’s Learning for Life platform is based on three pillars: a connected pipeline of learning opportunities; meeting people where they are on their employment journey; and propelling them to decent, meaningful work. Through its interdependent programs, the platform is able to serve three critical stakeholder groups: today’s workforce, tomorrow’s workforce, and those who have been left out of the workforce.

**TODAY’S WORKFORCE:** How do you ensure that today’s workforce has the skills needed to remain relevant tomorrow? How do you do this at a scale that will make a difference?

In order to create engaging and continuous learning experiences for both current and future employees, SAP launched openSAP, a platform for Massive Open Online Courses (MOOCs). Since its inception, openSAP has offered hundreds of free online courses; today more than 2.5 million people have participated. Meanwhile, the Global Pro Bono program, SAP Social Sabbaticals, supports mission-driven organizations that are working to increase opportunity through digital inclusion. In total, SAP Social Sabbaticals have benefited 3.2 million people and contributed to the creation of more than 380 new jobs.

**TOMORROW’S WORKFORCE:** Sixty percent of Generation Z want work that makes a difference. This challenge, perhaps more than any other, requires ongoing collaboration. Breaking down the silos between governments, educators, civil society, and business to build direct lines of communication and open feedback between sectors will be instrumental.

Code Unnati, a “corporate-to-citizen” initiative to address severe gaps in IT manpower in India and around the world, is showing how this might be done. Implemented in partnership by SAP, our customers, Indian NGOs, and the Indian Government, Code Unnati offers online literacy and digital skills training to adolescents, youth, women, individuals with disabilities, and other marginalized citizens.

**ACCESS FOR ALL:** Digital inclusion is the cornerstone and foundation to ensuring we succeed in solving for quality education and decent work, because digital inclusion is social inclusion. How can we ensure access to new opportunities for even the most underserved groups? This isn’t just a nice to have — this is a business imperative and a critical component to socio-economic stability.

I’m proud of our contributions to the SDGs—but as I mentioned at the start of this article, the real power of SAP is our core business. Our global ecosystem has more than 404,000 customers and 17,000 partners in 180 countries, plus a base of 94,000 employees representing more than 140 cultures. By sharing our skills, expertise, products, and financial support with our ecosystem including our nonprofit and social enterprise partners, we can accelerate their ability to achieve impact, and in turn, our own.

“Access for all” doesn’t mean a separate stand-alone program—it means embedding inclusive programming as a cross-cutting approach to the core business. Only in this way can Learning for Life truly represent all people “regardless of where they come from.”

**A call to lead and learn together**

Today’s workforce... tomorrow’s workforce... the underserved and underrepresented... those not yet included in the workforce... everyone is impacted by technology and global innovation. We see our greatest challenges as our greatest opportunities. To that end, the company is ready to take Learning For Life to the next level, which is why we’ve partnered with PYXERA Global to create a new, multi-stakeholder partnership initiative called Corporate Champions for Education. Building on the success of the Social Sabbatical program, we are extending that opportunity to companies of all sizes, across industries, to activate our collective purpose, support the future workforce needs of our organizations, and together create opportunities for an inclusive, digital world.

Participants from several companies will form diverse teams to work on specific projects, using their professional business and operational skills, during four-week secondments with nonprofit organizations in select underserved markets. The beauty of such an approach is that participants benefit even as they serve their host organizations. Global Pro Bono programs are proven approaches to both developing global leadership skills and improving employee engagement. Through these experiences, it’s clear that building the capacity of local organizations is the best, most sustainable way to ensure that their clientele have the requisite competence and confidence to participate in today’s—and tomorrow’s—global economy. ■

*For more information about joining the Global Corporate Champions for Education, [www.pyxeraglobal.org/corporatechampion](http://www.pyxeraglobal.org/corporatechampion). For more information on SAP and Learning for Life, please visit [www.sap.com/learningforlife](http://www.sap.com/learningforlife)*
Waste carried by tidal currents accumulates along waterways and coastlines and spans the ocean surface down to the deepest sea floor. It damages coral reefs, ensnares marine species, and is often mistaken for food and ingested. Plastic debris entering the food chain is exerting multiple hazards on wildlife and potentially on humans, with repercussions that are poorly understood.

Vast advances are attributable to plastics, from expanding food access and reducing food waste to improving transportation security, building lighter vehicles, and increasing access to shelter. Yet these gains often come at considerable cost—plastic waste does not biodegrade, and as such it is here to stay, becoming a bigger problem day by day.

Why has plastic pollution become one of the greatest global threats to ocean and waterway health?

95% of plastic waste flowing into the world’s oceans is due to lack of:
- Regulation
- Institutional capacity
- Infrastructure

The “Great Pacific Garbage Patch” has grown to be 1.6 million square kilometers in size—in other terms...

3x the size of France

SOLVABLE PROBLEM

ELIMINATING MARINE DEBRIS

Imagine...

A Garbage Truck Dumping Plastic Waste

Into the Ocean

Every minute of the year

8 million metric tons of annual ocean plastic

Recent innovations to clean up waterways include Debris Skimmer Boats, the Ocean Cleanup initiative, and other awareness-building campaigns and events occurring each year around the world. In corporate boardrooms, action plans lay out a ‘new plastics economy’ as leading companies like Adidas, PepsiCo, and others reframe how they use and reuse plastic across their product and packaging workstreams.

Kenya recently introduced the world’s strongest ban on plastic bag production, while China, a major importer of solid waste, banned low-quality recyclable material from re-entering its shores and adding to existing stockpiles. These downstream waste cleanups must be coupled with upstream industrial efforts to realize systemic changes that span the value chain.
Right now, we are all part of a pivotal moment of cultural change. In a brief span of time, plastic straws have gone from a relatively accepted part of everyday existence to a niche-need product. However, if this action to address plastic in the environment stops at straws, then we won’t have accomplished very much. One of the core questions we and our friends in the plastic pollution movement are asking is:

“... How do we turn this awareness and desire for action into truly transformative change that reshapes how we think about and use throw-away products and creates something better in its place?”
A couple of years ago, my friend Marcus Eriksen from the 5 Gyres Institute and I were discussing this question. The conversation led us and several of our friends to author a report called the Better Alternatives Now List (BAN List), where we analyzed publicly-available data from a number of sources to determine which plastic products were the most-widely found in the environment.

Now, my caveat here is that we purposely did not look at microfibers from synthetic clothing, microbeads from cosmetic products, fishing gear, or plastic dust abrading from tires. These are all significant sources of plastic pollution, but from our perspective, they are products that require technical design changes from industry, and not necessarily changes in the way we consume.

When we looked at the data, what we found was that the majority of products—not surprisingly—were convenience ‘to-go’ food and beverage packaging. Here are the top 10:

1. Food Wrappers
2. Bottle Caps
3. Beverage Bottles
4. Plastic Bags
5. Straws & Stirrers
6. Lids
7. Utensils
8. Cigarette Butts
9. Take-out Containers
10. Cups & Plates

When you look at worldwide data, you see pretty much the same types of products in the environment. The exception being that in Latin America, Africa, India, and Southeast Asia, you also see elevated volumes of single-serve personal care products and sundry items—like shampoo, laundry detergent, and dish detergent—packaged in little plastic pouches commonly called sachets.

We can dramatically reduce plastic pollution in the environment by switching out throw-away plastic for another throw-away product made from a different material, such as paper. However, with this approach we’re often pursuing strategies that are “out of the frying pan, into the fire.” For example, Styrofoam container bans—which we support—often lead to restaurants substituting paper-based to-go containers. Of course, throw-away paper products also come with their own set of environmental problems—deforestation, carbon emissions from manufacture and transport, and methane released while breaking down in landfills, among others.
While substituting lower impact materials for high-pollution plastic products might be part of the solution for certain products, the real game-changer is figuring out how to get what we want without any disposable materials at all. Now let’s imagine what this world might look like in three future scenarios:

1. You walk into a coffee shop and realize you forgot your reusable mug, and right as you turn to your friend to complain about how hard it is to do the right thing, the person behind the counter says, “that’s okay, we’ve got reusable cups on deposit. It will cost an extra dollar and you can change it out for a clean mug at any coffee shop in town next time you need your caffeine fix.”

2. You’re taking lunch to-go from your favorite restaurant to eat in the park. As you wrestle with the guilt of taking yet another throw-away to-go box, the person behind the counter hands you your food in a reusable to-go box and directs you to a kiosk in the park where you can drop it off, or at any restaurant or grocery store in the city.

3. You’ve ordered take-out from Seamless or Grub-Hub or a meal kit from Blue Apron, and the delivery driver hands you your food in reusable containers and says that they will pick them up next time you place an order.

Now consider this system on a broader scale, where every airport, mall, theme park, zoo, university campus, office building, and corporate campus did the same thing—got rid of throw-away cups, lids, plates, cutlery, straws, and bags. Everywhere you go, you are getting what you want without all the waste—in reusable systems that are created and run by business.

The good news is that this is already happening. All over the world, businesses, college campuses, and communities are saying no to disposable packaging and designing reusable systems that are convenient, sustainable, and more fun than the old throw-away model. Here are just a few examples:

- In Portland, Oregon and Durham, North Carolina, businesses and community members have developed reusable to-go container systems to serve restaurants and patrons.
- In Switzerland, ReCircle is serving hundreds of to-go oriented restaurants with reusable containers.
- In Germany, cities like Freiberg, Hamburg, and Berlin have reusable coffee cups on deposit at cafes throughout each city.
- Companies like CupClub, DishJoy, and VesselWorks are creating reusable systems for coffee cups, dishware, to-go containers, and more, for businesses, campuses, office buildings, and communities that want to ditch throw-away for reusable.

The reuse revolution isn’t some far-off dream; it’s happening today. The question for business, government, and citizens should be, “How can we make this the new norm?”
LIFTING AND INSPIRING LIVES ACROSS THE WORLD. For generations, BD has made a profound impact on untold millions of lives. From helping enable the inoculation of children in the final fight against polio, to identifying infectious organisms and providing the research tools for the discovery of an AIDS vaccine, we take on the steepest health challenges with a powerful purpose: advancing the world of health. This is why we attract not only many of the most talented minds, but also many of the most committed. Because when the people in a company are working to do the right thing, challenged against great odds, there’s no telling how much good we can accomplish. With our extensive partnerships, depth of insights and exceptionally broad portfolio of solutions from discovery to the delivery of care, we have the talent and the tools to make an even greater difference in essential human health. Discover the difference one company can make. Discover the new BD.

Learn more about the Difference of One at bd.com/NewBD

© 2018 BD. BD and the BD Logo are trademarks of Becton, Dickinson and Company. BDCR26980
Bag the Bag; Save a River
WASHINGTON D.C. BAG FEE HELPS REDUCE PLASTIC POLLUTION

LAURA ASIALA
TOMMY WELLS is the director of the Department of Energy and Environment (DOEE) for Washington D.C. Appointed January 2015, he is chiefly responsible for protecting the environment and conserving the natural resources of the District.

In 2009, when he was a DC Councilmember representing Ward 6, Tommy crafted The Anacostia River Clean Up and Protection Act of 2009, to implement $0.05 fee on disposable bags. This landmark legislation prompted thousands of District residents to curb use of plastic bags and instead opt for reusable, green alternatives. Seventy-five percent of DC residents reported a decrease in their use of disposable bags once the bill took effect on January 1, 2010. The legislation also established a fund to restore District water bodies, including the Anacostia River; support the distribution of reusable bags in the District; install trash traps; and provide environmental education for District students. These and other efforts, championed by Tommy, have helped position the District as a model for sustainable green living for jurisdictions nationwide.

PYXERA Global Senior Fellow Laura Asiala sat down with Tommy to gain some insight into the remarkable efforts—and impact—to curb marine debris and ocean plastics in the U.S. capital, in anticipation of The Global Engagement Forum: Live 2018.

The work you’ve done in the District of Columbia has been remarkable, and set an example for other watershed cities. Where did you get your original inspiration?

I took a vacation in Switzerland with my family, and I was just struck by how clean the waterways and roads were. I decided I needed to do at least one thing before I stood for re-election, so I went home and did the research. I knew there was no appetite for a ‘bottle bill’ (requiring retailers to charge and refund deposits on beverage containers), but plastic bags had become a big (trash) issue. I asked my staff to come up with a strategy on plastic bags, and initially I said, “Let’s just ban them.” But then we actually looked at the data. One of my staff members found that in Ireland a 20-cent charge for a plastic bag reduced trash by 80 percent. We looked around the country; we knew that New York City had been working on a bill, but it had not gone through. In rural Virginia, there was interest in a bag bill, because of the issue of bags getting caught in farming equipment, but it also had died.

But in DC, you were able to get this—a bag ‘fee’—through. What was your approach?

After we did the initial research to decide which issue to focus on—plastic bags—we invited the heads of the grocery stores in the region to come and talk to us, and they did. We asked, “What is the role of the bag?” and we found out that it was customer convenience, and that plastic bags cost retailers two cents per bag compared to paper bags which cost about five-to-six cents each. With the extreme pressure on profit margins in the grocery business—sometimes three cents on the dollar—we realized that forcing the use of paper bags would drive up their costs.

By putting a required price on the bag, we forced the question, “Do you need a bag?” which meant that people actually had to consider it.

In addition, the grocery leaders requested that we not make this an issue of grocery stores but to extend the bag fee—which was always intended to focus on food—to other retailers who sold food and beverages—for example, fast food restaurants and liquor stores. This was a really good point, because those locations were also providing plastic bags which were contributing to pollution. We were now applying this fee evenly.

When we talked to the people who owned liquor stores, they worried that their customers would see this bag fee as a way to ‘sock the customers,’ rather than a fee being imposed by the government. So we also coupled the introduction with a strong advertising campaign—we had signs on all the buses that said ‘Skip the Bag; Save the River,’ so that everyone knew where that fee was coming from.
I’m impressed with the engagement you had with relevant businesses in order to really understand their point of view. How did this approach extend to the public sector and fellow lawmakers?

We looked at why bills like this had failed in the past and we found that opponents—typically the American Chemistry Council and the Plastics Industry Association—made the point that such a fee was essentially a ‘tax’ on the poor, by increasing the costs of their groceries. However, when we did the research, we found that by examining the point at which most food stamps were redeemed—Save-A-Lot and Aldi’s—those stores were already imposing a bag fee. So really, the poor were already subsidizing the use of plastic bags. The bag fee which we proposed would simply make that more equitable by applying it to everyone.

We took all of that information and input and we crafted the bill, and I went to every single council member and made the case. When it was finally put forward, we had 11 of 13 council members introduce it. The opponents had no real local support to work with—we had already addressed the objection most often cited—and the bill went through.

What’s happened as a result?

We saw a significant decrease right away—within six months of the bill passing—65–75 percent reduction in plastic bag trash, and then it leveled off. The main thing is that people were asked at the point of sale whether or not they wanted a bag, so people had to think about it. A lot of times, a small purchase doesn’t require a bag. It’s not automatic anymore.

Some people still want the convenience of the bag and they pay the nickel, and that results in a fund which now amounts to approximately 2.5 million dollars annually. We deploy those funds in a lot of ways, but one key way is that we work with non-profit organizations—Groundworks DC, Anacostia River Keeper, and Anacostia Watershed Society—who use the money to purchase ‘Band-along’ litter traps, installing and maintaining them in key areas to prevent trash from flowing into the Anacostia River, which then flows into the Potomac River, which then flows into the Chesapeake Bay and out to the Atlantic Ocean.

We redeploy the funds in a number of other ways as well, including river clean up and education.

How have you influenced others with these results?

We were able to get Al Carr of the Maryland House of Delegates to introduce the same bill at the same time. It didn’t pass, unfortunately, but Montgomery County (Maryland) Executive Ike Leggett came over and met with our team. He introduced it in Montgomery County, and it passed.

What’s next?

The thing that we see primarily now are plastic containers—water bottles, soda bottles, basically anything that contained a beverage. Glass bottles are in that too, but it’s primarily plastic. There hasn’t been a bottle law passed in the United States in the last 30 years. Manufacturers used to want the bottles back, but now the market is all single-use containers, and they don’t want them back. When we tried to pass a referendum, retailers and manufacturers pulled out all the stops and defeated it. The good news is that Coca-Cola has a mission statement now to recapture up to 100 percent of the product packaging by 2030 and ensure that all materials are recyclable. If they all did that, it would be huge—especially if they didn’t wait until 2030 to start—so they could be part of the solution and not the problem.
Subsidies targeting energy poverty alleviation exist, but investments often do not focus on the greatest needs. Partnerships have formed to address the issue, but linkages between corporations and other sectors remain weak. Change is occurring at a transactional level, without the sectoral alignments needed to bring new innovations to market.

Providing access to safe, clean, and affordable energy would break the cycle of poverty and fulfill proposed long-term value approaches to economic development. The International Energy Agency’s 2040 projections show that 500 million global citizens will still lack access to electricity, and 1.8 billion will still use unclean fuels to cook and heat their homes.
CONTEXTUALIZING GLOBAL ENERGY POVERTY
On the Prospects of Powering the Last Mile

KATE STEEL

Access to modern sources of energy is fundamental to eradicating poverty and spurring economic growth. Energy touches every aspect of a household’s quality of life. Without access to electric lighting, kids huddle around smoky kerosene lamps to study at night—endangering both their health and education. Lack of refrigeration and gas or electric cooking also impacts a family’s health as it hinders food preservation, makes it harder to purify water, and brings more smoky pollutants into the home. And without electricity for charging phones and starting businesses, many people are falling further and further behind both informationally and economically.

The scope of the problem is still enormous—more than one billion people lack access to electricity, and at least that many only have access to power that is intermittent and unreliable. Even rural households that have electricity still rely on wood or charcoal for cooking if the power is too expensive for using an electric hob or oven. Since the overwhelming majority of people living off-grid reside in rural areas in Africa, South Asia, and Southeast Asia, the target geographies are clear. Ending energy poverty features prominently in the Sustainable Development Goals (SDGs). The target within SDG 7—affordable and clean energy—is to achieve universal access by 2030.
While it’s helpful to better define the challenge, and the goal for overcoming it, the question remains as to whether this problem is solvable. Do we have the tools to achieve universal access by 2030? The answer is, “Yes. Absolutely.” One only has to look at the number of countries in the world that do have universal access. If around two billion people lack reliable power, that means more than five billion have good access to electricity.

The technology to achieve universal access to electricity exists. The barrier isn’t technology—it’s cost. It is often joked, at least among energy nerds, that Thomas Edison would easily recognize today’s central grid because the technology has changed so little since his first commercial power plant at Pearl Street in New York. Significant improvements are possible through smarter metering and control systems, the addition of distributed generation, and other innovations, but there is no technology breakthrough needed to expand the grid.

While running power lines over long distances to reach a small rural community would not be cost-effective, there are appropriate solutions for remote customers. For truly isolated households, or those that have only a basic demand for power for lighting, cell phone charging, and maybe TV, a solar home system can reliably meet their needs. For households that have higher power needs and live closer to either a commercial or agricultural processing site, a microgrid may still be more sensible than the central grid.

To solve energy poverty, solar home systems are the most efficient solution. Unlike the central grid, these systems have evolved considerably in the past 25 years. Early versions used component parts that were often incompatible, and the inefficiency meant that a relatively expensive 50–100 watt solar panel could power a couple lightbulbs, but not much else. Innovations in design and manufacturing of both panels and other components have resulted in lower cost and higher performance. A 50–100 watt solar panel can now power multiple LED lamps, a TV, and other small appliances, as well as recharge cell phone batteries.

Despite these advances, the more important innovation has been in financing. Even with the precipitous drop in technology costs, solar home systems would still be unaffordable in countries where GDP per capita is under USD$5,000. The “pay as you go” (PAYG) model, pioneered in India by Simpa and in Kenya by M-Kopa, allows customers to pay for the system in installments over time. So long as the account is current, the system continues to function. If the customer falls behind, the power shuts off until a payment is made. This plan works well for people who may not have regular incomes, or may have to stop paying for a period of time when other short-term, unexpected expenses arise.

With the technology and financial model solved, how are there still households without access to electricity? While the PAYG model is great for customers, it puts a serious financial burden on companies selling solar home systems, having to pre-finance all the equipment they sell. Companies require large volumes of debt at a low interest rate, and must be willing to cover the risk of low-income families. Therefore, the problem is the money available often doesn’t match the need, nor the scale. The Global Off-grid Lighting Association (GOGLA), the trade association for the off-grid sector, estimates that USD$2.4–2.6 billion will be needed in the next five years, primarily in the form of working capital, to fuel growth in PAYG system sales.

While there are still necessary improvements in design, customer service, product offerings, and the overall business model for deploying solar home systems, the solution to energy poverty already exists. Small off-grid solar will not power industry, but it will bring households out of darkness. All we need is the right kind of money.
In Myanmar, Building Prosperity and Progress through Renewable Energy

CORINNE REILLY

Sein Win May has spent more than her share of time in the dark. At 51, she has lived her whole life in Shin Hla, a remote village with 600 residents in Myanmar’s Dry Zone, accessible only by boat. Like most of the country’s vast rural stretches, Shin Hla has no grid electricity. For Sein Win May, this meant lighting her small shop, where she sells cooking supplies, dry foods, and snacks, with a single, dim lightbulb, at least when she had the means to recharge the batteries to which they connected, a time-consuming and costly process.

“It took a day to go to the place that refills them,” Sein Win May explained. “Sometimes I couldn’t go because I’m running my shop alone, and when I did, I had to pay a lot.”

Then she heard about an alternative. Pact, a nonprofit international development organization with a long history in Myanmar, was helping villagers buy solar home systems. Sein Win May had heard of solar panels before, but no one was selling them near Shin Hla. She knew little about them, but figured she’d never be able to afford solar. This offer, though, seemed different—and possible. The systems were reasonably priced, especially compared to other lighting options, and a complementary loan program allowed interested residents to pay them off in manageable installments.

Sein Win May decided: she was ready to go solar.
Pact had been working in Myanmar for years when, in 2011, it began an ambitious, wide-ranging development project called Shae Thot, or “The Way Forward,” with funding from the U.S. Agency for International Development (USAID). Central to Shae Thot are Village Development Committees, or VDCs, comprised of democratically elected village members, who are tasked with leading local development initiatives. Each VDC received support to launch a fund for local development projects. Starting with an allotment of seed money, VDCs grew their funds by providing low-interest loans to community members. They used proceeds to fund priority projects selected with input from the community—such as roads and schools. Meanwhile, Pact and other Shae Thot partners worked with villages to address other fundamental community challenges including maternal and child health, livelihoods, and water; sanitation, and hygiene.

“As we progressed, we saw that many, many villages were spending a large portion of their development funds on energy,” said Richard Harrison, Pact’s then-country director and current CEO of Smart Power Myanmar. “It was clear this was a huge unmet need.”

More than 60 percent of Myanmar is not served by the electrical grid. Even in areas with grid access, blackouts are routine. While the Myanmar government has made efforts to build and improve the essential grid infrastructure, lack of affordable, reliable energy perpetuates cycles of poverty and limits progress in areas from education and livelihoods to health and food security.

“Without power, development stalls,” Harrison said. “We were seeing it firsthand.”

With funding from Chevron, Pact launched Ahlin Yaung—“light” in Burmese—in 2015, with the aim to bring renewable energy to 1 million people in rural Myanmar by 2021. Other corporate partners soon joined the effort, including Shell and electrical equipment multinational ABB. Rather than acting as a vendor of solar home systems, Pact supported the fledgling industry already in place, uniting communities with established suppliers, and provided loans for systems, which cost, on average, USD$60. Building on efforts to organize and empower Village Development Committees, program implementers worked with community leaders to create Village Development Funds (VDFs), a revolving fund whose initial zero-interest loan enabled them to begin lending to individual households at a low interest rate. The resulting interest revenues fund other community development projects while the principal payments return to the Ahlin Yaung Fund, becoming available to expand the program by extending energy loans to new villages.

Consistent access to electricity was a game-changer for families that had never had it before. They were able to run their businesses longer and more efficiently. Their children could read and study past sunset. And compared to other energy and light sources—wood, kerosene, candles, and diesel generators—solar is cleaner, safer, and considerably cheaper.

Pact is now expanding its renewable energy work in Myanmar to include larger-scale solutions like rural solar mini-grids that will allow people to productively use energy and power larger appliances.

While the Myanmar government has made efforts to build and improve the essential grid infrastructure, lack of affordable, reliable energy perpetuates cycles of poverty and limits progress in areas from education and livelihoods to health and food security.

More than 60 percent of Myanmar is

Fall/Winter 2018 | 39
“We know developing communities want and deserve more,” Harrison said. “To create real economic development, they need energy solutions that can do much more than power lights, fans, and televisions. They need to power real industry.”

In May, the organization launched a new program called Smart Power Myanmar with financial support from The Rockefeller Foundation, to accelerate electrification and economic development. Smart Power Myanmar seeks to achieve universal access to energy through larger-scale energy infrastructure like mini-grids, by facilitating investment, and supporting policy and industry coordination to meet demand.

The promising results in Myanmar have provided the confidence and insight to expand globally. Energy for Prosperity is Pact’s newest program to improve health, livelihoods, and other development outcomes by improving energy access.

“Aside from preventing economic development, energy poverty has significant and wide-ranging effects on public health. To this day, in sub-Saharan Africa only 34 percent of hospitals and 26 percent of other health facilities have access to reliable energy,” said Matthew Cullinen, who leads the Energy for Prosperity program. “When we think about the productive use of energy, what could be more productive than medical equipment that saves lives? That’s why we’re looking at ways to target high impact opportunities like health facilities and businesses.”

In Shin Hla, Sein Win May now has a well-lit shop. It took her eight months to pay off her solar home system, and it has been worth it. As soon as her system was up and running, her shop stayed open later, and the day-long trips to charge batteries were history. With higher sales and profits, she has expanded her offerings, and plans to keep going.

“I am earning more and more,” she says.
Although our planet produces enough food to feed the entire global population, one-third of all food produced is never consumed and an estimated 815 million people go undernourished. Meanwhile, an astounding amount of fresh water used in agriculture—three times that of Lake Geneva—produces food that is never eaten. Most of this food loss happens before produce ever reaches a market. In Sub-Saharan Africa, over 75 percent of loss occurs during the production, handling, and sorting stages. Collectively, this results in economic costs of approximately USD $750 billion. As a rapidly growing global population places growing demands on our available resources, businesses and communities can no longer afford these types of inefficiencies in agricultural value chains.

Post-harvest loss is a solvable problem. A farm to market approach begins with a healthy seed and ends in a nutritious bite. It begins with an efficient, integrated value chain, starting with the people who produce, transport, and sell our food.

Eliminating the loss of perishable produce at every stage along the agricultural value chain will improve access to a nutritious diet for the food insecure, enhance farmer incomes, and increase the business value for companies.
A NIGERIAN FARMER CREATES HER PATH TO PROGRESS

MATTIE HILL & ELLIE JORGENSEN

Ramatu Sale doesn’t look like a banker, and she probably doesn’t think of herself that way. She is a wife and a mother of eight, and she’s a farmer. Yet her ability to secure capital for her own business and her creativity in making it available to other female farmers in northern Nigeria makes her a legitimately successful community banker as well.

Ramatu cultivates half a hectare of land—just over one acre—growing tomatoes, that if delivered successfully, are sold at market or processed into tomato paste, a leading agricultural product in Nigeria. Nearly 70 percent of the workforce in Nigeria participates in agriculture, roughly half of whom—21 million—are female. Like many Nigerian farming families, Ramatu and her husband have separate plots that they cultivate independently. Despite this independence, Ramatu explains that in Nigeria, women must still rely on their husbands for some things. “You can’t go into agribusiness without the permission of your husband. That is why you see two pictures on my ID—mine and my husband’s.”

Female farmers are at a perpetual competitive disadvantage compared to their male counterparts, who receive greater access to resources such as loans, agricultural inputs like seeds, fertilizers, and equipment, and extension services that deliver valuable information. According to the FAO, if all female farmers had increased access to resources, the total agricultural output of the world’s emerging economies would increase by 2.5–4 percent. In terms of food security, this would translate to a global reduction in undernourished people by 12–17 percent. In northern Nigeria, the YieldWise Nigeria program, funded by The Rockefeller Foundation and implemented by PYXERA Global, is helping to close the gap.

Ramatu has been working with YieldWise Nigeria since 2016. The original intent of the program was to increase farmer incomes by increasing the quantity and quality of the tomatoes they raise to reach the market. Historically, nearly half the crop was lost every year, because the tomatoes rotted before they could be sold or processed. But the program has reached beyond that to ensure women are not left behind, by offering transformative livelihood development opportunities.

Members of Ramatu’s farmer association—the Dalili Women Tarbiyya Farmers Multipurpose Cooperative Society—have struggled to access credit, a huge barrier for the women. Ramatu explained, “There is a big challenge with my association members. Almost all 40 members in the cooperative have challenges with cash flow. Farming costs are so high that they are becoming discouraged. Without money to buy fertilizer, they use manure, but it is not like the mineral or commercial fertilizer.” The UN Food and Agriculture Organization (FAO) reports that most emerging economies face a five-to-ten percent deficit in credit use between female-headed and male-headed households, and the women in the cooperative recognize the correlation between increased investments in their business, via credit, and their farms’ agricultural output.

Ramatu approached this challenge as an entrepreneurial opportunity. She had learned the process and requirements for
formalizing her farming business through banking by attending YieldWise Nigeria’s financial management trainings. She capitalized on her own ability to secure credit by launching a small loan business and now supports other women, keeping track of loans in a log and advertising her business with flyers, although new customers are mostly won over by word of mouth.

The success of the loan scheme speaks for itself. Ramatu says that after receiving a loan “[the association members] push that money far.” Many women can now afford to pay for their own inputs and support their children in school, and they pass on the story of their success to others. The cooperative’s membership has grown because of Ramatu’s loan service, along with members’ willingness to share their experiences. Combining the exploration of new opportunities with knowledge sharing are key methods the YieldWise Nigeria team uses to amplify women’s economic empowerment and grow the program’s role in promoting greater inclusion. It is an example of an initiative that empowers underserved individuals and communities by prioritizing ownership through the self-selection of appropriate solutions.

Extension services are a key provider of inputs, information, and guidance, and women require the same suite of resources and services as male farmers, but historically only five percent of female farmers actually get what they need. The YieldWise Nigeria team supplements local extension services through a partnership with the governments of Kano, Katsina, and Jigawa states. In addition to hiring its own extension agents, the state Ministry of Agriculture assigns male and female extension agents to YieldWise Nigeria in order to provide improved trainings, catalyze community engagement, and target issues facing both female and male farmers, all while boosting the capacity of the government to deliver these services on its own.

The YieldWise Nigeria team uses a philosophy of “Show, Don’t Tell” to demonstrate improved techniques and allow farmers to determine their applicability to their own plots. For female farmers like Ramatu, the opportunity to visit other farmers and engage with other methods of farming represents another avenue through which to grow their skills. This promotes the self-selection and adoption of new practices and appropriate technologies and deepens the value of extension services.

Through better access to extension services, new methods of farming, and affordable loans, Ramatu and the women of her farming association are increasing their agricultural output and investing in their families’ health and welfare. She was proud to explain how the YieldWise Nigeria project and her business benefit her children. Speaking about her three eldest sons, she said, “It is a great achievement, with my own farming, to support these boys. One is finishing his university now, and the other is working to be accepted to university. One is already a graduate. He is working to secure a job teaching in a primary or secondary school.” When asked if any of her children are interested in farming, she energetically responded that they all were. Her success has demonstrated the viability of agriculture in creating supplemental income and contributing to personal goals.
To Reduce Post-Harvest Loss, Start with a Sustaining End in Mind

STEVE SONKA, RAJSHREE AGARWAL & SONALI K. SHAH
The Paradox of Post-Harvest Loss Reduction

Managing PHL is a challenge endemic to agriculture. Farmers invest significant time and resources to producing an attractive field of grain or an orchard of trees brimming with fruit. But to become available to consumers, that produce must be harvested, stored, and transported in systems that may operate over many months and miles.

In low-income countries, excessive levels of PHL are routine and result in reduced well-being of smallholder farmers, diminished food security, and unnecessary environmental degradation. Nearly one-third of food produced globally does not reach consumers’ plates due to a combination of PHL, the loss that happens before market, and food waste, which occurs at the consumer level. While not new, the problem is stubbornly persistent even though, simple, affordable technologies are demonstrably effective and readily available. Why aren’t they used?

This is the PHL paradox. Typically, it is framed as farmers “failing to adopt” a specific technology where the objective of the pilot project intervention is framed as reducing PHL levels in a specific, limited setting where external resources artificially reduce user costs.

This limited view does not work. Instead, effectively managing PHL should be framed as a market development opportunity, not simply a technical problem. Technology may, in fact, be required, but even demonstratively effective technology alone is insufficient. Success is achieved when an organically, self-sustaining, market-based supply chain is established. That supply chain provides the pull for the technology, and even a demand to enhance the technology, just as it generates value for the farmer, market chain participants, and consumers.

Let’s consider two figures to illustrate this idea. Figure 1, titled “Demonstrating that the Intervention Technology will Work” stereotypically depicts a pilot effort focused on demonstrating that the intervention technologies to reduce PHL will work in the field. The green arrow refers to the supply chain of an agricultural commodity—maize, for example. That chain is shown as extending from production to the eventual end user market. Assume the intervention is focused on improving storage at the smallholder farmer level. This could be done through use of hermetic storage bags, small metal silos in the farm household, or community storage systems. All these approaches are technically effective.

Most often in these cases, donor(s) provide the specific technologies as a package to be tested and adopted. This is illustrated in Figure 1 as a black box. In addition to technology, the project likely will provide education, support, and service within the context of that black box. But even with this packaging technology, and the understanding of how to use it effectively, the effort requires time and ongoing attention. Even when a certain level of success is attained, often there is no sustained, scaled adoption that follows. The pilot is done; stakeholders revert to traditional methods.
Figure 2, Establishing a Market-driven Supply Chain, replaces the “black box” with a purple arrow depicting components of a supply chain for the technology of interest. Now there are two supply chains. One for the agricultural commodity, maize, and one for the technology that enables improved storage—bags, silos, or community storage. Significantly, the components of the technology supply chain extend beyond the physical elements of production and delivery. Included are key marketplace mechanisms such as service, user support, and product improvement and evolution over time. Indeed these mechanisms are actually vital, if scaled adoption is to occur.

To sharpen the distinction, let’s compare the two pilot efforts. One successfully demonstrates that PHL can be reduced. The second establishes a market-driven supply chain for the technology necessary to reduce post-harvest loss. We then ask the key question, what happens after each project successfully ends? For the first, the black box of technology and service disappears. For the second, actors along the purple supply chain have a natural incentive to expand the extent of adoption and to improve the technologies needed for PHL reduction.

Why doesn’t the market handle this?
The PHL paradox remains: if there are relatively easy products available to reduce loss, why don’t the farmers adopt them? Why should pilot programs be required to do more than demonstrate technical success? Don’t market economies and the profit motive exist to exploit opportunities where innovations have demonstrable value? Where are the entrepreneurs?

Those are reasonable questions in settings where the institutions that facilitate exchange and market dynamics are strong. However, in many less-industrialized country settings, especially in rural areas, institutions tend not to be strong. For example, formal credit mechanisms may not exist or may be difficult to access, and enforcement of contracts tends to be uncertain, restricting the entrepreneur’s ability to establish alliance relationships needed to access supplies and services. Academics employ the term institutional void to identify such deficiencies. Void may be too strong a term in many situations. It is common, however, for those capabilities to be inadequate to facilitate a strong, vibrant ecosystem which fosters the establishment and growth of formal business innovation.

Institutional voids provide at least a partial explanation for the PHL paradox. Even with evidence of opportunities that can contribute to economic and societal objectives, inadequacies in the institutions surrounding the relevant market potential impede implementation. There are a few instances where communities have sustained lower levels of PHL beyond the pilot stage, and all of them established a market-driven supply for the needed technology as part of the development initiative.

This required effective collaboration among the social, private, and public sectors. Social sector organizations played a catalytic role in circumventing key institutional voids that otherwise would have inhibited a sustainable supply chain. This takes more effort and understanding than simply providing technology as a “black box.” The only real, sustainable success comes when a market-driven supply chain is established.

Although the rice farmer in Bihar suffers significant losses while his rice awaits threshing, he is using the “best practices” commonly available. If he used improved technologies, he could reduce his losses and improve his financial return. Collaborative efforts of the private, social, and public sectors can foster development of the supply chains needed to make improved technologies routinely available. Then the farmer will be better able to transform his hard work and investments to higher yields and enhance his family’s well-being.

Figure 2, Establishing a Market-driven Supply Chain, replaces the “black box” with a purple arrow depicting components of a supply chain for the technology of interest. Now there are two supply chains. One for the agricultural commodity, maize, and one for the technology that enables improved storage—bags, silos, or community storage. Significantly, the components of the technology supply chain extend beyond the physical elements of production and delivery. Included are key marketplace mechanisms such as service, user support, and product improvement and evolution over time. Indeed these mechanisms are actually vital, if scaled adoption is to occur.
As a global real estate advisory firm specializing in tenant representation, advocacy and action are at the core of who we are and what we do.

Savills Studley proudly supports PYXERA Global and the Global Engagement Forum: Live in building a culture of sustained collaboration that improves lives and communities worldwide.

Together we can take action on social challenges for which there are known and tested solutions.
Launching Serbia into the Digital Age

The Pursuit of e-Governance in Belgrade, with a Pro Bono Assist from IBM

MARIJA DEMIROVIĆ

Let’s time-travel to Serbia, circa 1999: it was a time before smartphones or Wi-Fi. The largest hard disk available had a 340MB capacity and cost USD$499. Meanwhile, the volume of printed paper generated for record-keeping and the demands of the modern age was reaching new heights with each passing day.
Given the vast technological progress experienced since 1999, it is astounding to think that in the Republic of Serbia, the laws regulating data storage for businesses have not changed for the last 20 years. This of course means that no framework for e-Government or the use of electronic documents is in place, putting a tremendous burden on Serbian society.

Serbian institutions have a long tradition of using paper in everyday official communication with citizens and businesses, and between themselves. They still keep their records in paper form. This is both costly and inefficient. The government and business community spend millions of dinars, the local currency, every year, creating, maintaining, transporting, and storing millions of paper documents, which slows down the decision-making process, among many other frustrations.

In 2016, the law still required Serbian businesses to store invoices, receipts, and other documents in paper for 3–10 years, depending on the type of record. For years, the law was met with protest for its impracticality, particularly from business owners who viewed the law as a step in the wrong direction with regard to the antiquated system. Besides issues with data storage, business owners decried their inability to use modern conveniences such as e-signatures, e-documents, and e-payments due to their lack of regulation.

In 2016, NALED partnered with IBM’s Global Pro Bono program, the Corporate Service Corps (CSC). It was an instrumental first step toward creating a framework for e-Government in Serbia.

In an engagement facilitated by PYXERA Global—a nonprofit that specializes in implementing Global Pro Bono programs for corporations seeking to leverage their core capabilities for social progress—four experts from IBM CSC arrived in Belgrade in May of that year, tasked with investigating the current state of practices and regulatory framework regarding e-Government. The team consisted of Edmundo Fortajada, a Continuous Process Improvement Project Manager from IBM Philippines; Mahesh Ganesan, a Project Executive with the Smarter Workforce/Kenexa Business Unit from IBM USA; Andrew Meyer, a Delivery Project Executive for Global Technology Services from IBM USA; and Aneeta Razdan, a Global Value Driven Proposal Program Leader from the department of Transformation & Operations for IBM India.

During a full month working with NALED employees, the CSC team conducted extensive research, leading to targeted recommendations to facilitate the transition. They scheduled meetings with important stakeholders from the government, the business sector, and the international community—including state secretaries, assistant ministers, the deputy speaker of the National Parliament, and the US ambassador to Serbia—which allowed them to gain valuable insight into the problem.

With additional information from various global reports ranking diverse approaches and detailing best practices, the team, in cooperation with the experts from NALED, developed a series of recommendations for Serbia’s e-Government framework. One of these was to establish a central body mandated to drive and coordinate all e-Government-related activities while ensuring representation from all stakeholders. Other recommendations called for creating common data definitions and authoritative data sources, implementing open data standards, and ensuring legal alignment with any new e-Government laws. The pro bono consultants also delivered a thorough action plan to assist in planning the implementation.

At the end of their month-long engagement, the team presented recommendations to government and business representatives at a round table in Belgrade City Hall, at an event that was specifically organized for this occasion. The strategy they unveiled contains analysis of the issue, identification of the main problems, suggested solutions, as well as prioritization tools for implementing e-Government in Serbia.
The chairman of the event was Ana Brnabić, President of NALED’s Managing Board at the time. She actively collaborated with the IBM team during their time in Serbia, which gave her a thorough understanding of all the important phases of the program. Ms. Brnabić went on to become Prime Minister of the Republic of Serbia, declaring digitalization one of the focus topics of her mandate.

For the pro bono consultants, the experience was an opportunity to work with the Serbian government, meet with top officials, plant seeds of success, and watch the change unfold. In between intense work sessions, there was also a time for fun and games—from an organized visit to meet the royal family to cycling tours, an ethno workshop, and NALED’s family day barbeque.

In the time since the team’s departure, 20 companies that had long been pressing for this type of progress founded the E-Government Alliance. The Alliance intends to serve as the foundational entity driving the change to come. At first, member organizations were primarily ICT companies, but soon enough, many other sectors wanted to join—retail companies, banks, and even local governments recognized the importance of the Alliance.

There are now 49 members of the E-Government Alliance and its significance is clear. The action plan for the development of e-Government in 2017/2018—designed by the Alliance—is now being implemented by the Government of the Republic of Serbia. The Alliance was also a government partner in the development of a legal framework for implementation of the eIDAS directive—electronic Identification, Authentication, and trust Services—adopted in October 2017. The Law on e-Government, which relies on the CSC team’s strategy recommendations, was adopted in April 2018.

The visit of IBM experts also initiated the formation of the Coordination Council for e-Government, a government working body chaired by the Prime Minister, which manages projects designed to improve the electronic operations of all government bodies, down to the local level.

As it is a topic that affects all three sectors equally—government institutions, businesses, and the civil sector—e-Government implementation must be approached with mutual understanding, cooperation, and a sharing of best practices. This approach has already proven valuable in recent cross-sector panel discussions and round tables.

Strengthened by the partnership with PYXERA Global, initial support provided by IBM, and expertise from the E-Government Alliance, NALED positioned itself as a provider of professional and technical support on the regulatory efforts of the Serbian government and a public advocate on electronic administration and e-business. The light at the end of the tunnel from underneath overwhelming amounts of paper-based record-keeping shows a future of economic growth and prosperity for a Serbian society operating efficiently and effectively in the modern era.

“Given the vast technological progress experienced since 1999, it is astounding to think that in the Republic of Serbia, the laws regulating data storage for businesses have not changed for the last 20 years.”
PULSE Volunteer Partnership

Since PULSE was launched in 2009, GSK has empowered 770 employees to work full-time for up to 6 months with more than 120 non-profit organizations, donating their professional skills and knowledge to create sustainable change in health and education in over 70 countries around the world.
Corporate Champions for Education

Creating Opportunities for an Inclusive, Digital World

**Corporate Champions for Education** is a Global Pro Bono program for skilled business and operations professionals from various companies, across industries.

Participants will be placed as short-term (4 week) consultants with non-profit organizations in emerging markets who focus on improving education for children, youth, and/or adults in order to give them the skills to actively and successfully participate in the digital economy.

SAP’s support means that companies of all sizes can participate in this type of global program; the cost is $16,000 per person, inclusive of travel and accommodation.

**Global Pro Bono programs provide a ‘TRIPLE WIN’**

1. Unparalleled global leadership development for participants

2. Skilled consulting to build capacity in host non-profits

3. New insights, engaged employees, and well-deserved CSR reputations for the participating companies

For more information, please visit pyxeraglobal.org/corpchampion or email corpchampion@pyxeraglobal.org