

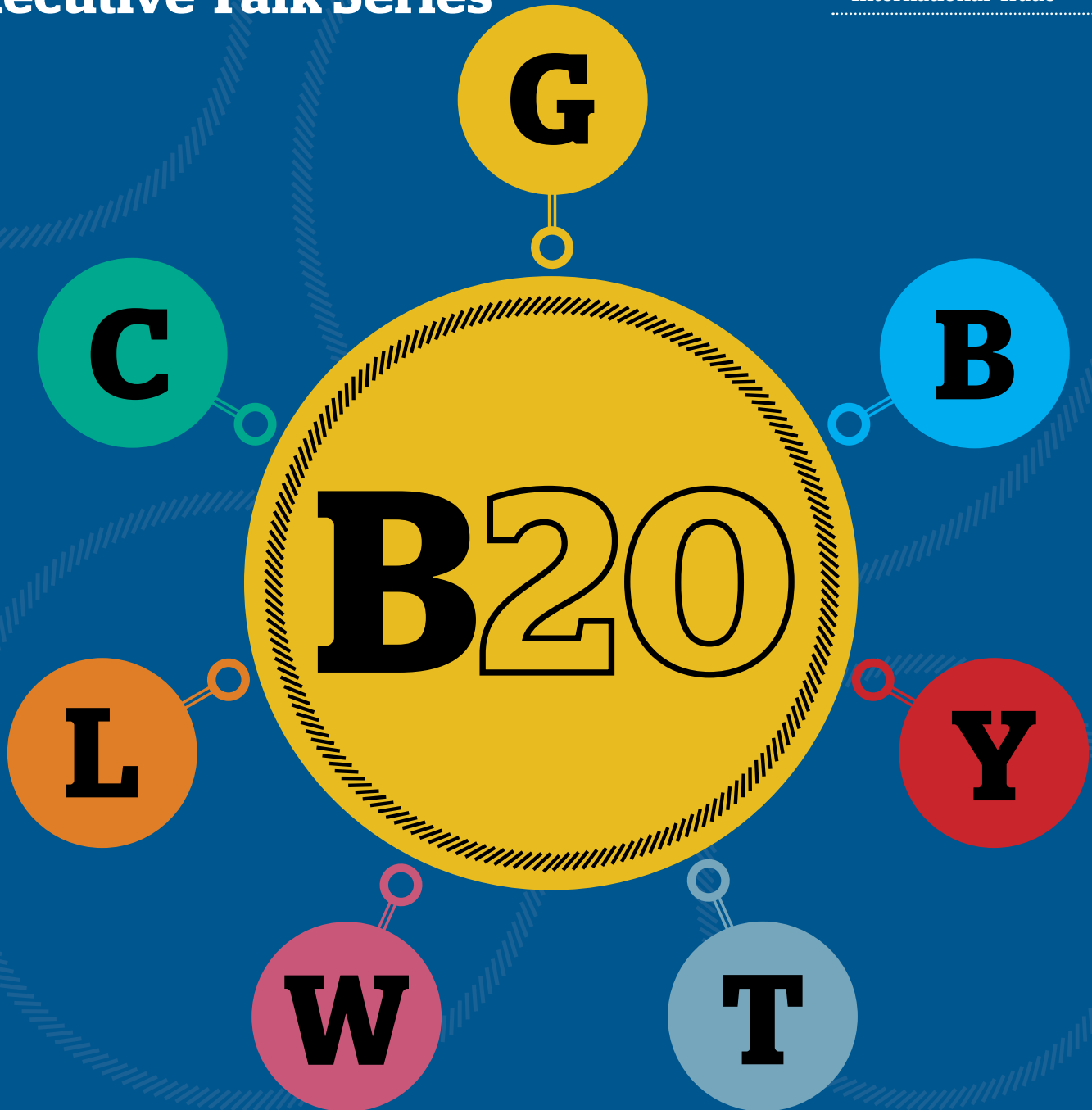


G20

Executive Talk Series

INSIDE G20

- > **GCEL: In Today's Digital Era**
How we Rebalance the Global Economy?
- > **Lead Feature: The Future**
of Globalization and International Trade





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Contents

Lead Feature

- 34 / The Future of Globalization and International Trade**
Andrew F. Gelfuso, Executive Director, World Trade Center,
Washington, DC *By Ana C. Rold*

Features

- 38 / The G20 Young Entrepreneurs' Alliance:**
A Strong International Voice Against Youth Unemployment
By Carsten Lexa, LL.M.
- 40 / Diverse, Resilient and Viable:** Stabilising Economies and
Societies Through Women's Empowerment
- 44 / The Potential of Reducing the Labour Market Gender Gap:**
Lessons from Latin America
By Julia Pomares, Gala Díaz Langou and Belén Abdala
- 56 / Silicon Valley's Cousin:** Mobile Technology Development in Turkey
By Anne Harris
- 58 / Beware Unproductive Success, Try Productive Failure**
By Manu Kapur
- 60 / Peaceful Solutions Can Be Locally Led**
By Liliya Yakova & Stacey Connaughton
- 62 / Language Rights Need to be at the Center of Global Policy**
By Akshan de Alwis
- 76 / It Is More Important Than Ever to Prepare**
Students to Navigate a Digital World
By Christine Horansky
- 78 / IT's Next Top Job Won't Be Done by Developers**
By Lauren Maffeo
- 80 / A Platform to Defend Free Trade**
By Julija Simionenko-Kovacs
- 82 / Making Fossil Fuel Subsidies Obsolete**
By Tobias S. Schmidt and Tyler Matsuo
- 84 / The Future of the Global Economy is in Sustainable Development**
By Jeremy Oppenheim
- 86 / Is Systemic Corruption Driving Violent Extremism?**
By Luke Waggoner and Egiuar Lizundia
- 90 / The Future of International Cooperation and**
Development in the Era of Globalization
By Erika Veberyte
- 92 / Indicators of Consumer Protection and**
Empowerment in the Digital World
By Bailey Piazza
- 94 / Is Clean Coal the Answer to India's Energy Security Needs?**
By Frank Maxwell
- 96 / Shaping a Rising China's Place in the Interconnected World**
By Bailey Piazza
- 98 / Tracing Knots:** Tangled Alliances in the
Tinderbox Known as the Caucasus
By Justin Leopold-Cohen
- 100 / Get Ready:** What You Need to Know About the Internet of Things
By Julie Kantor and A. Crosser
- 104 / Learning from the Luddites:** Harnessing Modern Tech for Good
By Caroline Holmund
- 108 / Change your Wi-Fi Password NOW!** Assessing Tomorrow's IoT Risks
By David Clemens

Thought Leadership

- | | |
|-------------------------------------------------------------|--------------------------------------------------------------|
| 20 / Human Bionics
<i>By Dr Robyn Stokes</i> | 28 / Globalization
<i>By Chris De Noose</i> |
| 24 / Sustainable Growth
<i>By Gianluca Riccio</i> | 30 / Shared Value
<i>By Cherie Nursalim</i> |
| 26 / Global Trade
<i>By John Denton</i> | 32 / Health and Development
<i>By Kimball Chen</i> |



Special Editorial Feature: GCEL

- 14 / Harnessing the Potential**
of the Digital Economy
- 16 /** How Digital Economy Tools
Can Assist To Rebalance
The Global Economy
- 18 /** The Global Solution Foundation
For Sustainable Economic
Growth Has Started

Branded Stories

- 46 / INTA**
- 48 / Astana Expo 2017**
- 52 / TCG**
- 66 / Eden Roc**
- 70 / ISCA**
- 72 / INTA**
- 112 / Pelago**

Advertisers Index

- 02** Schloss Elmau
- 05** ICC G20 CEO Advisory Group
- 43** ETG
- 46** INTA
- 48** Astana Expo 2017
- 51** Randstad
- 55** Taiwan Civil Government
- 68** Eden Roc
- 75** INTA
- 89** Diplomatic Courier
- 103** Dsx Inc
- 107** The GEF.org
- 111** Hawaii Island Retreat
- 114** Waters
- 116** Better Business with SDG Pyramid



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Page 06/07

Dr. Jürgen Herhaus
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B20 Sherpa

Page 08/09

Prof. Dr. Dieter Kempf
President of the Federation
of German Industries (BDI)

Ingo Kramer
President of the Confederation
of German Employers'
Associations (BDA)

Page 10/11

Dr. Eric Schweitzer
DIHK-President

Oliver Bäte
Allianz SE-CEO and
B20 Taskforce Chair

Page 12/13

Dr. Kurt Bock
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Comprising CEOs from major global corporations, the ICC G20 CEO Advisory Group effectively targets G20 policy development on a worldwide scale. The group is an enduring, legitimate voice of international business, gaining recognition by G20 governments as the primary source of business expertise on the global policy agenda.

To learn more about how your company can participate in the ICC G20 CEO Advisory Group, please contact Jeffrey Hardy at Jeffrey.hardy@iccwbo.us

B20 Executive Committee

Dr. Jürgen Heraeus B20 Chairman



B20 Germany: Resilience, Responsibility and Responsiveness

Germany took over the G20 Presidency in challenging times. Current events from the UK Referendum to the US Elections have demonstrated three things: Nothing can be taken for granted. Polls and forecasts frequently fail. And the world is becoming more and more uncertain. At the same time policy-makers around the world face massive challenges such as climate change, high unemployment, and security concerns.

Together, G20 members generate around 85 percent of global gross domestic product. In addition, they account for more than three quarters of world trade. As a consequence, this cooperation offers the outstanding opportunity to shape global economic governance. Our global economy is changing rapidly. We are facing a multitude of risks: climate change, political conflicts, terrorism to name just a few.

The G20 can serve as an agenda setter.

It has proven repeatedly that it can provide important impetus. It can build trust between our governments and ensures international cooperation.

Our job as B20 is to assist the head of states in setting the framework for future-oriented, sustainable economic growth. The B20 is member-driven. We agree on our positions by consensus. Over the months, hundreds of companies—big and small ones—and business associations worked together in taskforces and working groups on a wide range of issues. Representing all regions of the world and all business sectors. We are proud to say that we can provide the necessary expertise to find answers for today's global economic challenges.

But the B20 recommendations are not limited to how to generate economic growth. The overall aim of the B20 is to lead the global economy towards a sustainable and future-oriented path. This is done through the consolidation, review, and thorough discussion of its members' positions. The B20 strives to deliver concrete, actionable recommendations to the G20. In doing so it enables political decision-making based on actual needs and real world solutions.

B20 Germany has chosen its motto accordingly: Resilience, Responsibility and Responsiveness—Towards a Future-oriented, Sustainable World Economy. Resilience is not a term restricted to financial systems. Instead resilience in an economic sense must also be a holistic concept, including new frameworks for disruptive technologies brought about by digitalization and those suited for increased uncertainty around the world to ensure crisis-responsiveness. As a family entrepreneur myself, I call for responsible leaders who

address challenges such as climate change and digitalization pro-actively. In the light of the recent rise of anti-globalization movements, the motto of “responsiveness” seems timelier than ever. The G20 as an international forum facilitates participation of SMEs and developing countries in global value chains in order to ensure inclusive growth, while national policymakers have to develop retraining, life-long education and social policies that effectively respond to a rising feeling of being left-behind by globalization.

We have therefore continued working on many issues which have been dealt with before: trade and investment, financing growth and infrastructure, employment and education, as well as small medium enterprises. However, it was also high time that we deal with new issues. One of our top priorities is digitalization. The fourth industrial revolution does not only change the way we produce, trade and work, it changes the way we interact and communicate—in other words our daily lives. To fully harvest the fruits of digitalization, we need to adapt global rules, for example on digital trade. Another priority is climate change, energy, and resource efficiency. The earth's resources are exploited in a manner never seen in history before. A practical solution to the planets resource problems is the circular economy. While many countries have already embraced this concept, we need to think globally, not just nationally or regionally.

Resilience, responsibility, responsiveness—if we want to ensure future-oriented, sustainable economic growth, business has an important role to play. We are ready to do so. ■

●● OUR JOB AS B20 IS TO ASSIST THE HEAD OF STATES IN SETTING THE FRAMEWORK FOR FUTURE-ORIENTED, SUSTAINABLE ECONOMIC GROWTH. THE B20 IS MEMBER-DRIVEN. WE AGREE ON OUR POSITIONS BY CONSENSUS. ●●

Dr. Jürgen Heraeus represents the global business community in the G20 process as B20 Chairman. He is Chairman of the Supervisory Board of Heraeus Holding GmbH and also serves as honorary Chairman of the German United Nations Children's Fund, UNICEF.

Dr. Stormy-Annika Mildner B20 Sherpa



B20: An Indispensable Partner of the G20

The work program of the 2017 B20 (Business 20) is ambitious. Eight working groups, each of which comprises around 100 representatives from companies, business associations, and international organizations, drew up recommendations to the G20 on diverse issues. Reaching consensus is not always easy, but the success of the B20 in previous years shows that it is more than worth it in the end.

Since 2010, the B20 has been responsible for the official business dialogue of the G20—the group of 19 leading industrialized and emerging economies and the EU. The global advisory body helps G20 members respond to global challenges—with consolidated and concrete action proposals that speak for the entire G20 business community. The complex and internationally connected work of the B20 is coordinated by business representatives of the country that at the time is holding the G20 Presidency. For the twelve months of the German Presidency, the leading German business associations—the Federation of German Industries (BDI), the Confederation of German Employers’

Associations (BDA), and the Association of German Chambers of Commerce and Industry—have taken over the leadership of the B20 from representatives of the Chinese business community, CCPIT. The B20 represents with one voice the business interests of all G20 members, in sectors ranging from manufacturing to finance. Both small and big companies take part in the B20. More than 700 representatives of companies and business associations belong to the B20 each year.

The theme of this year’s B20 presidency is “Resilience, Responsibility, Responsiveness – Towards a Future-oriented, Sustainable World Economy”. And this theme could not have been chosen better. Growing populist and anti-globalization sentiments underline the need for policy-makers as well as business representatives to show responsible and responsive leadership. National go-it-alone strategies are not an answer to today’s problems. Rather, political and business leaders around the globe need to work together to pave the way towards a future-oriented and sustainable global economy. Top priorities this year for us were trade, digitalization, as well as climate change and energy. Accepting our own responsibility as business, we also placed responsible business conduct and anti-corruption high on the agenda.

The fact that business representatives from all G20 members engage in regular exchanges, consolidate interests, and promote joint positions is, in itself, of value. It goes without saying that—like in the G20—negotiations are sometimes difficult and heated in the B20. But it is especially the consensus-finding on these controversial topics that shows the G20 valuable options for workable solutions. Indeed, we all have the same goal: sustainable, inclusive and dynamic growth in a world that is becoming ever more closely integrated.

In this way, the B20 contributes to understanding, trust, and interconnectedness. It is often through these intensive exchanges that it first becomes clear that our interests and goals are more similar

than we originally thought. For the G20, it is important and helpful to have a consolidated position on the economy rather than a cacophony of voices from the individual member states. Moreover, the G20 relies on the and practical experience of the business community to identify the measures that need to be taken.

Many of the B20 recommendations are incorporated into G20 decisions—each year, the International Chamber of Commerce (ICC) analyzes this process. Moreover, recommendations of the B20 are often explicitly referred to in G20 statements. We believe that the B20 played an important role, for example, in the G20’s current focus on digital trade and in the numerous G20 initiatives aimed at improved funding for small and medium-sized enterprises.

Most of today’s challenges are global. One country alone will not be able to tackle them. The same goes for fully leveraging existing opportunities. Countries opting to go it alone are doomed to fail. For this reason, the G20 not only plays an important role in providing an impulse for policy-makers; it is also important for determining the agenda of international policy and global governance. It helps to further develop the rules for the global economy. Of course, it is true that the G20 does not have a permanent secretariat like that of the United Nations or the World Trade Organization. And in contrast with other international organizations, it cannot take any decisions that are binding under international law. But precisely because it is not dependent on rigid structures, it has been able to demonstrate during times of crisis the flexibility needed to secure the main planks of global economic policy. If we did not have the G20 yet, we would need to create it today. ■

●●MANY OF THE B20 RECOMMENDATIONS ARE INCORPORATED INTO G20 DECISIONS—EACH YEAR, THE INTERNATIONAL CHAMBER OF COMMERCE (ICC) ANALYZES THIS PROCESS.●●

Dr. Stormy-Annika Mildner is currently the B20 Sherpa, responsible for the operational leadership of the G20 business dialogue. She is also the head of the department “Foreign Economic Policy” at the Federation of German Industries (BDI).

B20 Executive Committee

Prof. Dr. Dieter Kempf

President of the Federation of German Industries (BDI)



A Stronger Path for Growth

There is no doubt that globalization, overall, has led to a huge increase in the level of prosperity all around the world. Globalization is not a zero-sum game. The flow of ideas, goods, services, people, and finance fosters economic growth, decreases income inequality, as well as enhances inclusiveness and well-being.

Between 1990 and 2014, world trade increased about fivefold and the stocks of foreign direct investment grew roughly tenfold. Global GDP has more than tripled, putting it far ahead of global population growth: The average global income per capita has grown by nearly 240 percent since 1990. As billions of people have seen their living standards rise, global poverty has fallen by half.

The recent financial and economic crisis was a big setback. World production and global trade experienced sharp declines. Confidence in the stability of the world economic order was severely disturbed. We have made considerable progress

since then. Economic growth, however, still remains shaky. Despite efforts from governments to restore the stability and resilience of financial markets, global economic growth has remained subdued. Many countries are still struggling with high unemployment rates, particularly among young people, as well as socio-economic inequality.

Parts of the population have been voicing strong opposition to trade liberalization and international investment. We need to take their worries and concerns seriously. At the same time, we should not sign up to seemingly easy solutions, which would have long-term negative consequences for all of us – business, workers, and consumers. We call on G20 members to renounce protectionist measures, may it be the introduction of new trade barriers or investment restrictions. Mercantilist policies destroy economic welfare, growth and productivity. They harm especially the poorest households, as numerous studies have shown. Improved global governance needs to ensure that trade and investment are not merely free but also rules-based and fair, especially when it comes to competition. Governments have done a lot in recent years to encourage economic growth, but not enough. Both the IMF and the OECD have rightly called for a more balanced policy mix to set a stronger path for growth and financial stability.

Governments and businesses need to strengthen their efforts to offer better education as well as lifelong learning opportunities, which can help people adapt to changing skill requirements and seize new opportunities. In addition, social policies need to assist people that temporarily find themselves without employment. The need for action is all the more evident in view of the great structural changes coming up. The

transformation of the economy on a global scale requires large investments, for example in digital infrastructure, enabling us to fully harness the advantages of industry 4.0, new services, and artificial intelligence.

Together with trade, the G20 should place foreign direct investment firmly on the agenda. Foreign direct investment not only provides much needed capital for many countries, it also supports the transfer of technology, expertise, and organizational capacities between countries. It is thus a powerful driver for future-oriented and sustainable growth.

However, there are still many barriers to cross-border investment, such as the complexity and inconsistency of rules; the lack of adequate mechanisms to protect against tax-related risks; legal, regulatory, and political instability; as well as the lack of effective dispute resolution mechanisms. Tackling these impediments will be fundamental for channeling capital, particularly to less developed countries.

The world has become an uncertain place. In January 2017, the Global Economic Policy Uncertainty Index measured the highest degree of uncertainty since the start of the calculations in 2000. The index tracks 17 countries that account for two thirds of global GDP. Geopolitical risks and terrorism, rising protectionism, and Brexit make this year one of the most uncertain period in decades. Uncertainty dampens economic growth prospects. To increase inclusiveness, welfare, and growth, we need more not less international collaboration. The G20 is thus more important than ever – to build trust, to provide leadership and, most of all, to move global economic governance forward. ■

●● GOVERNMENTS AND BUSINESSES NEED TO STRENGTHEN THEIR EFFORTS TO OFFER BETTER EDUCATION AS WELL AS LIFELONG LEARNING OPPORTUNITIES, WHICH CAN HELP PEOPLE ADAPT TO CHANGING SKILL REQUIREMENTS AND SEIZE NEW OPPORTUNITIES. ●●

Prof. Dr. Dieter Kempf, as of January 2017, is President of the Federation of German Industries (BDI), representing more than 100,000 large, medium-sized, and small firms from all branches of the processing industry, which together employ more than eight million people.

Ingo Kramer

President of the Confederation of German Employers' Associations (BDA)



Creating Employment Opportunities for Everybody Through Dynamic Labor Markets and a Global Level Playing Field for Fair Competition

The BDA's central mission is to actively represent business interests in the field of employment, social, and industrial relations policy. Together with the trade unions BDA stands for the successful German model of social partnership. It has been the leading constituent of the B20 Employment and Education Task force. This task force was chaired by BDA Vice President Gerhard F. Braun and consisted of employers' organizations as well as of companies from a variety of sectors. Its 98 members covering 26 countries were chosen with respect to geographical and gender balance, representing all continents. The members came together during several physical and online meetings. The result of this process is a 60 page policy paper treating relevant issues related to employment and education, which will shortly be presented.

In its policy recommendations, the Employment and Education Task Force focuses on three main topics: First, demographic changes, technological advancement, and an increased mobility are profoundly changing the world of work and are expected to do so even more in the future. Therefore, it is important for G20 members to promote open, dynamic, and

inclusive labor markets. On the one hand, we need to remove legal and structural barriers on the labor market and promote diverse forms of work, such as full time, temporary or part-time work and other forms of flexible contracts. On the other hand, governments should ensure policy frameworks that improve female entrepreneurship and female labor market participation. Measures will include removing legal restrictions that hinder female participation in the labor market and finding ways to improve female access to careers in the STEM sector. Finally, G20 countries should bring labor migration policies in line with labor market needs by setting up an immigration law that is easy-to-understand and employment-friendly. It needs to allow easy access to the formal labor market and reduce incentives for informality.

Secondly, the technological change has led to diverging impacts on labor markets; in particular as regards the impact on skills and therefore education and learning for life. G20 members should harness the potential of technological change through better education and training, entrepreneurship and innovation frameworks. We need to implement clear and consistent regulations for businesses to operate and innovate in, while reducing bureaucracy and legal barriers to drive innovation. Best results will be achieved in close cooperation with companies.

G20 governments should also urgently invest in skill development. We want to instruct our workers in skills that make them competitive in the new economy. Therefore, the G20 should identify, jointly with the business community, the skill needs of each country and establish, in cooperation with the social partners, vocational training programs. Finally, G20 countries should promote entrepreneurship, which is crucial for more dynamic labor markets. Entrepreneurs are job creators. The G20 should support B20 actions regarding the G20 SMART Innovation Initiative, and reduce administrative, regulatory, and financial barriers for start-ups.

Thirdly, global trade has created many jobs and helped many workers to get even better jobs. However, human rights infringements as well as inadequate work conditions remain a concern. G20 members should create a

global level playing field and promote fair competition. Governments have to implement and enforce legislation that is respecting human rights and labor protection standards. Companies have to respect human rights and national legislation and need to support improvements in working conditions. In fact, many companies are already actively contributing to create safe and healthy working environments. There are numerous alliances, initiatives, and measures to meet these responsibilities in global supply chains. Governments should not only acknowledge these existing efforts, but also build on existing initiatives such as the Vision Zero Fund, the UN Guiding Principles on Business and Human Rights, and the OECD Guidelines for Multinational Enterprises. In the end, additional initiatives regarding global supply chains would jeopardize the success of the existing framework.

As a result of this work, I am pleased to see that the task force has come up with this very concrete and rich paper containing strong recommendations to policy makers. The goals mentioned can only be achieved by close international, cross-sectoral cooperation. Governments and businesses need to closely cooperate in order to find optimal solutions adapting to each national context. ■

Ingo Kramer is the President of the Confederation of German Employers' Associations (BDA), which represents more than one million businesses employing a total of over 24.5 million people. The BDA is the leading organization representing business interests in the field of social policy, labor law, industrial relations, education, human resources and CSR, European and international social policy. It is a discussion partner for its members, the general public, the German government and the German parliament. As a social partner BDA is in constant dialogue with trade unions and serves as a platform and catalyst for its sectoral and regional member federations regarding all questions of collective bargaining policy.

B20 Executive Committee

Dr. Eric Schweitzer DIHK–President



SMEs – the backbone of economies

The time for the business community to raise its voice is now. Recent developments in global politics and economics show that businesses must emphasize the importance of international collaboration clearly and insistently. B20 Germany can play a key role in guiding the G20 towards a more open and inclusive environment for global trade and investment. Our mission includes enhancing free trade, increasing the participation of SMEs in global value chains and promoting inclusive labor market related education – topics that are also important to the Association of German Chambers of Commerce and Industry (DIHK). To raise the voice of SMEs around the globe with our global network of German Chambers of Commerce and Industry is part of that mission.

World trade is becoming increasingly uncertain for companies. Each month the WTO, OECD and DIHK detect more trade barriers that make it harder for companies to keep up with the pace in international competition. More and more political actors seem to turn away from multilateral trade agreements. The trend of protectionism is growing. However, free and rule-based trade is important, as it allows economies to grow and create jobs, globally and locally on the basis of a widely accepted and fair level playing field. When trading systems are designed multilaterally and in an inclusive manner, they create welfare for everyone. B20 Germany aims to ensure and further develop framework conditions for open markets and free trade.

Around the globe more than 90 percent of companies are classified as SMEs which provide the large majority of employment in almost all economies. Comparatively though, SMEs proportion in Global Value Chains represents only a small share of the global trade volume. Regulations and insufficient access to financial and digital resources hinder them to act beyond borders. B20 Germany argues that the performance of SMEs could be improved drastically by increasing their access to trade as well as to the financial and digital infrastructure, especially outside industrial centers.

An open and inclusive society requires a responsive education system that ensures the transfer of the right skills. Vocational training has often proven an efficient method to qualify future employees in theoretical

and practical skills. True to the motto “learning by doing”, the trainees gain qualitative knowledge and the employers are sure to have well educated employees. B20 Germany focuses on promoting such an inclusive labor market relevant education.

The B20 process is an important framework of working together as a global community. In harmony with the other G20 engagement groups and the Sustainable Development Goals of the United Nations, B20 empowers businesses around the world to meet the challenges with the right approaches.

The network of German Chambers of Commerce and Industry (AHKs) with its 130 locations in 90 countries will continue to support the B20 process in shaping the world of tomorrow. The chambers guide companies in the process of internationalization with legal advice, reliable contacts and specific business knowledge about the country of interest. The approach of thinking global, but acting local has been a successful model for a resilient German economy abroad.

Our world is at a crucial stage. Challenging times ask for reasonable actors in the business community. Let’s face the challenges and respond to them with sustainable solutions – to be more responsive, more responsible and more resilient. I encourage all of you to share the recommendations of B20 Germany for your advocacy at home. ■

●● AN OPEN AND INCLUSIVE SOCIETY REQUIRES A RESPONSIVE EDUCATION SYSTEM THAT ENSURES THE TRANSFER OF THE RIGHT SKILLS. VOCATIONAL TRAINING HAS OFTEN PROVEN AN EFFICIENT METHOD TO QUALIFY FUTURE EMPLOYEES IN THEORETICAL AND PRACTICAL SKILLS. ●●

Eric Schweitzer is the President of the Association of German Chambers of Commerce and Industry (DIHK), which is the umbrella organization for both, the 79 Chambers of Commerce and Industry (IHKs) in Germany and the 90 German Chambers of Commerce Abroad (AHKs) worldwide. The DIHK speaks for more than three million entrepreneurs, representing all commercial enterprises in Germany.

Oliver Bäte

Allianz SE–CEO and B20 Taskforce Chair



Certainty and Cooperation: Improving the Environment for Investment

The world economy has come a long way since 2008, when international financial markets were on the brink of collapse. The world economy has become a lot more resilient.

Yet, global economic growth has been depressed for several years. Financial conditions have tightened, risk appetite has decreased, credit risks have risen, and the repair of balance sheets has stymied. In advanced economies, heightened uncertainty and setbacks that hurt confidence have dampened growth prospects, while the economic powerhouses of emerging economies have lost steam not least because of declining oil and commodity prices.

In 2014, the G20 had agreed to increase global growth by at least two percentage points over the next five years – but we are far from reaching this goal. A lot of work remains to be done. Monetary policy has reached its limits. We need a new policy mix. Governments should redouble their efforts to improve the business environment. This includes facilitating private infrastructure investment and implementing more coherent and growth-oriented financial regulation.

Many countries face considerable investment gaps in infrastructure, research and development, and education. For example: No less than \$3.3 trillion per annum, or altogether 3.8 percent of the global gross domestic product, would have to be invested in infrastructure projects worldwide by 2030 to keep pace with population and economic growth. The need for good infrastructure is particularly high in emerging and developing countries. Emerging economies account for 60 percent of the global investment needed for infrastructure.

Investment in infrastructure can provide economic stimulus, while infrastructure itself can drive productivity and competitiveness as well as improve the quality of life. It is the foundation for economic and social development and an important stepping stone to fulfilling the Sustainable Development Goals. Infrastructure also has a vital role to play in achieving the goal set in the COP21 Paris Agreement to limit the increase in global temperature to below 2°C, compared to pre-industrial levels. Infrastructure usually has a long lifespan, often across several decades. About 75 percent of the infrastructure that will be

in place in 2050 does not exist today. So, there is not just a great need to bridge the infrastructure gap but also to channel investment to future-oriented, sustainable and resilient infrastructure projects.

The global financial crisis exposed many shortcomings in the financial system and in its regulation. The G20 played an important role in managing the crisis, largely overcoming its direct consequences. Recent regulatory reforms, both domestic and international, have made the markets more resilient. Banks have made significant progress in meeting increased capital requirements, building recovery and resolution planning, enhancing corporate governance standards and increasing liquidity buffers.

At the same time, the benefits of such policies need to be balanced against their negative impact on economic growth. This is not a call for deregulation. Well-designed financial regulations are vital to ensure stable financial markets. But it is a call for more regulatory coherence across countries as inconsistent implementation and interpretation of international standards on the national level lead to market fragmentation, barriers to access and unfair competition, further depressing growth.

There is a lot of unfinished business we need to tackle if we want to make the global economy truly future-oriented and sustainable. National ‘go-it-alone’ strategies are destined to fail. We hope that G20 members will act together, providing the necessary leadership for other countries to follow. ■

●● *THE GLOBAL FINANCIAL CRISIS EXPOSED MANY SHORTCOMINGS IN THE FINANCIAL SYSTEM AND IN ITS REGULATION. THE G20 PLAYED AN IMPORTANT ROLE IN MANAGING THE CRISIS, LARGELY OVERCOMING ITS DIRECT CONSEQUENCES.* ●●

Oliver Bäte, chairs the B20-Taskforce on Financing Growth & Infrastructure and he is Chairman of the Board of Management of Allianz SE.

Strategic Partner

Dr. Kurt Bock**BASF SE–CEO and B20 Taskforce Chair**
Implementing Paris: Paving the Way For a Climate-Friendly, Innovative World Economy

Climate change is a reality that we must acknowledge and address. The Paris Agreement underscores the commitment of the global community to limit global warming to less than 2°C compared to pre-industrial levels. While the Agreement lays out essential goals, we must ensure that these goals are successfully implemented. This will not be easy. We will need to change the way we produce and consume energy across all areas of our economy, while also ensuring competitiveness, economic growth and job creation. Effective global climate protection will require innovation that can only be achieved by a competitive industry driving research and development aimed at delivering energy-efficient products and processes.

We need to think and act globally—now more than ever. The G20 members account for about 80 percent of global emissions and are therefore key players in reducing CO₂ emissions. While the G20 cannot issue binding international rules, it can play an

important role in setting the global agenda and providing much-needed leadership and guidance. Working together, the G20 can facilitate the transition to a low-carbon, energy and resource-efficient global economy. The B20 stands ready to support these efforts, and has set up a dedicated task force for energy, climate and resource efficiency, representing over 90 businesses from more than 20 countries and diverse economic sectors.

In its final report B20 identifies global carbon pricing as key for implementing the Paris Agreement. An essential step in supporting the UN Framework on Climate Change (UNFCCC) is to develop effective measures that states can use to collect data on emissions, mitigation and actions. This information provides the basis for international review and analysis. Common standards and transparency are important not only to ensure that all parties put forward their best efforts but also for carbon pricing.

We therefore propose a G20 Carbon Pricing Platform to establish operational rules and modalities for international carbon pricing. Member States can also use the platform to share good practices on explicit and implicit carbon pricing policy options and to explore possibilities for bilateral or multilateral collaborations that can converge into larger international carbon pricing systems over time. Furthermore, the platform represents a perfect forum to share best practices for the use of revenues from carbon pricing and for the redirection of inefficient fossil fuel subsidies. As such, G20 members should address the risk of carbon leakage and aim to ensure an energy transition which avoids competitive distortions and benefits all.

Economic growth has lifted billions of people out of poverty and is indispensable to fulfill the 2030 Agenda and its Sustainable Development Goals (SDGs). At the same time, economic growth and a growing world population are increasing the stress on

ecosystems and on natural resources that are already scarce today, such as agricultural land, terrestrial and marine wild-life, water and minerals. Meeting future demand for reliable, affordable and sustainable energy will require significant and timely investment in a resource-efficient and climate-friendly infrastructure. The accelerating pace of innovation is transforming most industry sectors and offering opportunities and solutions to drive the transition toward a sustainable world economy. The business sector has already developed innovative solutions that are driving more resource-efficient and lifecycle-oriented production processes. It is therefore a good time for the G20 to put resource efficiency and lifecycle-based economic thinking on its agenda, to discuss its potential, and initiate formats for best practice exchange.

The B20 views and recommendations are shared. In a unique initiative, B20, C(civil) 20 and T(hink tank)20 have reached out to the G20 governments in a joint statement on the elements of a sustainable energy transition. The statement asks the G20 governments to take the lead in implementing the Paris agreement, to establish a global carbon pricing mechanism and phase out (inefficient) fossil fuel subsidies as well as to enable financial markets to deliver on sustainable development.

The G20 members have the necessary capacities to drive the transition toward a sustainable world economy and should take the lead in developing policies that leverage the potential of business to innovate and invest. By cooperating with international and regional organizations and standard-setting bodies, the G20 can make its messages and decisions heard and drive implementation, also in non-G20 countries. This is an opportunity we cannot afford to miss. ■

●● **EFFECTIVE GLOBAL CLIMATE PROTECTION WILL REQUIRE INNOVATION THAT CAN ONLY BE ACHIEVED BY A COMPETITIVE INDUSTRY DRIVING RE-SEARCH AND DEVELOPMENT AIMED AT DELIVERING.** ●●

Dr. Kurt Bock chairs the B20-Taskforce on Energy, Climate & Resource Efficiency Leadership. Since 2011 Kurt Bock is Chairman of the Board of Executive Directors of BASF SE.

Klaus Helmrich

Siemens AG—Member of the Board and B20 Taskforce Chair



Global Connectivity: Increasing Welfare and Growth

Digitalization has revolutionized business models, interactions, and our daily lives, the ways we communicate, trade, produce and work. Worldwide, it fosters equal opportunities, global welfare, quality enhancement, and cost reductions. Digitalization is transforming production and production-related services along the whole value chain—from design, simulation and prototyping, as well as production planning to production and services. It is unlocking huge potential for individualized mass production, shorter time to market, higher productivity, and better utilization of resources – all based on smart use of data. Digitalization improves product benefits, boosts consumer welfare, and facilitates participation as well as equality. It is a critical cross-sectoral and cross-cutting means to achieving the Connect 2020 Agenda, the Sustainable Development Goals (SDGs) and the Addis Ababa Action Agenda—from growth, trade, and employment to health, education,

energy access, infrastructure, agriculture, food security, and overall societal welfare: digital technologies are crucial catalysts of progress.

However, digitalization is inherently of a transfrontier character—full of challenges and opportunities! Therefore, governments and business need to work closely together to tackle these obstacles together with future-oriented actions. The importance of close international coordination and collective action cannot be overstated.

What is to be done now? First, the fundamentals of global connectivity and cybersecurity need to be strengthened. Not only do cyber threats create economic damage. Clearly, if there is lack of confidence in the safety and security of digital technologies, the adoption of new technologies—such as autonomous driving, digital healthcare or augmented intelligence—will falter even if they offer substantial benefits. Global cooperation is important to avoid fragmented regulation or processes and preserve the global and open nature of the Internet. Therefore, G20 members have to stand up against creeping digital protectionism, increase interoperability of legal frameworks, and facilitate the transfer of data in accordance with privacy requirements. Related to that, to achieve the goal of providing affordable Internet access to everyone, G20 members have to foster the expansion of ICT infrastructure. They have to set ambitious national goals for the expansion of broadband coverage and implement investment-conducive frameworks.

Enabling people and businesses to make use of digitalization’s opportunities is not just a matter of broadband coverage—digital literacy and skills are just as important. As digitalization will continuously lead to shifting skill demands in the labor market, G20 members and businesses need to invest

in capacity building and education.

Life-long learning, continuing education, as well as re- and upskilling should be top priorities. Close cooperation between governments and business is critical in this area. Curricula in schools, universities, vocational training, and training programs should be regularly adjusted to market demand.

Second: The broadband to fully use the potential of Industry 4.0 and the Industrial Internet underlines that expansion of ICT infrastructure is needed in both developing and industrialized countries. To continuously encourage the use and dissemination of technological applications for production, G20 members have to foster and protect innovation. Furthermore, the industry-led development of globally coherent standards as well as reference architectures should be strengthened. Standards-based interoperability is at the basis of market efficiencies.

And Third: With the exponential development of Artificial Intelligence the next level of economic transformation is right at our doorstep. AI-enabled innovations such as self-driving vehicles, smart infrastructure, or advances in machine learning have tremendous potential to improve people’s lives. However, its full implications are not yet fully understood. Spreading knowledge, an informed public dialog and supporting innovation are key issues to be addressed by policy-makers.

The G20 as the central hub for global governance needs to address these barriers to global connectivity, the expansion of Industry 4.0 and the Industrial Internet, and the development of AI. If it does, the G20 will go a long way in reaching its goal of increasing inclusiveness, welfare, and growth to the benefit of all. ■

●● *ENABLING PEOPLE AND BUSINESSES TO MAKE USE OF DIGITALIZATION'S OPPORTUNITIES IS NOT JUST A MATTER OF BROADBAND COVERAGE—DIGITAL LITERACY AND SKILLS ARE JUST AS IMPORTANT.* ●●

Klaus Helmrich, chairs the B20 Digitalization Taskforce. Since 2011 he is a member of the Managing Board of Siemens AG. His special responsibilities for Siemens include Africa & Europe, the Digital Factory Division, and the Process Industries and Drives Division.

HARNESSING THE POTENTIAL OF THE DIGITAL ECONOMY

GABRIELA RAMOS - SPECIAL COUNSELLOR TO THE SECRETARY-GENERAL AND OECD SHERPA

The digitalisation mega-trend is realising wide-ranging economic and social implications, and this transformation must be responsibly managed, with the focus of policy-makers on enabling individuals, communities and businesses to adapt and continue to benefit. Critically, harnessing the potential of the digital economy is key to escaping the low growth and low productivity trap in which the global economy is caught.

We have reason to be optimistic because progress has been significant, with 40% of people world-wide now connected to networks, compared to just 4% in 1995. By 2030, 8 billion people and 25 billion active “smart” devices will be interconnected in one huge information network¹. Yet, today only 25% of individuals are using simple office software, such as word processors and spreadsheets, at work. And among them, over 40 per cent do not have sufficient ICT skills to use these tools effectively. By the same token, firms have seen broadband connectivity rise significantly, to the point that it is almost universal in many G20 economies. Between 2010 and 2014, it rose by almost 30 percentage points in Mexico. At the same time, important differences in ICT adoption and usage exist between large and smaller firms. For example, while broadband access and basic applications such as websites are common among most firms, more advanced applications, such as cloud computing or e-sales are used by a much smaller share of firms. The complexity of digitalisation is stunning, and the policy implications considerable.

This is why in 2016, under the Chinese Presidency, G20 Leaders endorsed the G20 Digital Economy Development and Cooperation Initiative, and then early this year, under Germany’s chairmanship, G20 Ministers responsible for the Digital Economy met for the first time, and endorsed a G20 Roadmap for Digitalisation: Policies for a Digital Future.

The OECD supports the G20 digital agenda by sharing its whole of government perspective, which is essential to understanding and responding effectively to this wide ranging transformation. This broad perspective underpinned the recent OECD report to the German Presidency on Key Issues for Digital Transformation in the G20. The latter highlights, in particular, four challenges:

Firstly, digitalisation is driving structural change, leading to the demise of sectors, creating new ones and leading to new sources of growth for traditional industries. It also offers economic development opportunities to leapfrog, as witnessed by Kenya’s growing FINTECH hub, or in my own country Mexico, where demand for robots grew by 119% in 2015². In developing countries, nearly 70% of the bottom fifth of the population own a mobile phone³ and more households own a mobile phone than have access to electricity or clean water, reflecting accelerating access to economic and social opportunities.

Secondly, digitalisation is transforming how we work, where we work, and what skills we need for participation in both the economy and society. Our industry and skills policies must respond by helping users to benefit from new technologies, across their life course.

The benefit to consumers and firms is also immense. Digital trade is opening new markets, enhancing opportunities to SMEs in global value chains – enabling them to operate as “mini-multinational” enterprises – and delivering new digitalised goods and services. In 2014, the initial public offering of the Alibaba Group raised USD 25 billion, the largest in the history of the New York Stock Exchange. Indian companies, Snapdeal and Flipcart, are pioneers in innovative platforms, with as much as 70% of their orders made via mobile phones⁴. Digitalisation is placing a new premium on cross border data flows. It is transforming how we engage in commerce, which comes with new and unique policy challenges.



GABRIELA RAMOS

SPECIAL COUNSELLOR TO THE
SECRETARY-GENERAL AND OECD SHERPA

Finally, the emerging structures of the new digital economy are affecting tax policy. This includes bringing new tools to broaden the tax base and to curtail tax evasion, as well as presenting challenges, such as taxing digital businesses, while simultaneously supporting innovations that we all enjoy and profit from. These are issues which the G20/OECD Base Erosion and Profit Shifting Inclusive Framework are tackling.

In this context, we identify 4 critical issues for intensified action: measurement, connectivity, consumers and gender.

The policy response to this dynamic, mega-trend must be shaped by facts and evidence informed policy advice. Policy-makers cannot afford to be flying in the dark. To this end, the OECD will be working with the IMF and other international organisations, to deliver later this year the G20 Action Plan to Improve Measurement of the Digital Economy in Macroeconomic Statistics, as well as to continue work on measuring digital trade and addressing specific digital economy measurement challenges. This will deliver the G20 Leaders' request to improve our understanding of the digital economy, and provide valuable insights on how best to shape policy responses.

Connectivity will underpin inclusive growth. Some G20 economies have almost ubiquitous Internet access for households, whilst others lag — the range is from 99% down to 20%ⁱⁱⁱ. The OECD welcomes the G20 commitment to continue analysing policies designed to extend coverage to underserved places, individuals and businesses, and to discuss ways on how to use digital technologies to overcome wealth gaps and income disparities. High speed Internet access is essential for social and economic connectivity, as it enables participation of individuals and businesses worldwide.

The consumer dynamics are astonishing. In the last decade, the share of e-commerce as a percentage of overall retail has nearly tripled in the United States^{iv}. But the Internet is also enhancing vulnerability of consumers -- and firms -- to cybersecurity risks. The OECD first put this issue on the table in 1998, with a Ministers' Declaration on Consumer Protection for Electronic Commerce, and subsequently developed OECD recommendations on digital security risk management (2015). We will build on this by helping to develop a set of G20 best practices for online consumers.

Finally, equipping more than half of the population -- women and girls -- with a wide digital skill set, increasing their participation in related fields of study (STEM in particular, and ITC), and engaging in a sector that is male dominated is fundamental to women's empowerment. The OECD report shows the share of women working in this field is typically one-fifth to one third that of men^v. To address this, gender stereotyping must be avoided from an early age. An agenda that enhances women's participation in the new digital economy is fundamental to meeting the G20 Leaders' commitment to reduce the gender gap in workforce participation by 25 per cent by 2025, and to delivering inclusive growth.

The G20 Roadmap — accompanied by the OECD's two-year project "Going Digital" — will underpin a multi-year G20 digital agenda. Together, the G20 and the OECD are set to embrace the digital era as a long term endeavor, to better understand its promises, to respond to its pressure points and to design better digital policies for stronger and more inclusive growth.



DIGITAL ECONOMY IS KEY TO ESCAPING THE LOW GROWTH AND LOW PRODUCTIVITY TRAP IN WHICH THE GLOBAL ECONOMY IS CAUGHT



ⁱ OECD (2015), Data-Driven Innovation: Big Data for Growth and Well-Being, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264229358-en>

ⁱⁱ El Pais, "Beyond Trump : the hidden threat robots pose to the Mexican economy", <http://mediareview2.oecd.org/Articles/DisplayArticle.aspx?ArticleKey=189646>

ⁱⁱⁱ The World Bank (2016), World Development Report 2016: Digital Dividends, International Bank of Reconstruction and Development / The World Bank, Washington DC.

^{iv} Meeker, M. (2015), "Internet Trends", www.kpcb.com/blog/2015-internet-trends

^v OECD (2017), Key Issues for Digital Transformation in the G20, OECD, Paris, p. 23 (Fig 5).

^{vi} United States Department of Commerce (2016), "Quarterly Retail E-commerce Sales, 2nd Quarter 2016", United States Department of Commerce, www.census.gov/retail/mrts/www/data/pdf/ec_current.pdf

^{vii} OECD (2017), Key Issues for Digital Transformation in the G20, OECD, Paris, p. 106 (Fig 37). www.oecd.org/G20/key-issues-for-digital-transformation-in-the-G20.pdf

GCEL

HARNESSING THE POTENTIAL OF THE DIGITAL ECONOMY

How Digital Economy Tools Can Assist To Rebalance The Global Economy

CAPTAIN SAMUEL SALLOUM - GCEL CO-CHAIRMAN

The Digital Economy has gained much attention by policy makers throughout the global arena since it promises to be the catalyst in today's 21st century technology era to drive a new wave of global economic growth. At the same time, it is the Technology Industry, our trusted 24-hour service providers, that have the capabilities and know-how to deliver upon policy makers' commitments thereby implementing what the world's citizens demand. Therefore, it is important to know where the technology industry stands today and how it can deliver what technology makes possible to boost our global economy

Today, we are living in complex, fast moving times where there are multiple business transformation triggers in play at the same time. The world is facing significant forces such as globalization, modifications in trade policies, shifts in technology, excess production capacity and changes in customer demand. The last two forces are increasingly affected by the changing demographics in the world.

As mentioned by Ms. Ramos, harnessing the potential of the digital economy is key to escaping the low growth and low productivity trap in which the global economy is caught. In this regard, the technology industry can drive a tremendous social impact in today's interdependent global economy by helping to de-risk trade and build the purchasing power of the mid and low income countries towards rebalancing the world economy. Otherwise, who will be left to buy the high technology goods and services produced by the high income countries during the next 20 to 30 years?

Even today the technology industry is battling a myriad of challenges towards meeting the needs of their customers including: poor top line revenue growth due to customers' tight IT budgets, restrictive M&A and IPO markets, stringent R&D spending and lack of capital. Marketing budgets are under the greatest pressure with sales forces being culled. Even the perennial technology leaders have recently announced job cuts.

To revive their reduced revenue and profit levels, information technology services companies are conducting more research to develop new processes, products and business models to overcome the aforementioned challenges.

Accordingly, these firms are focusing on innovations such as: software as a service (SaaS), cloud IT, off shoring, digital convergence and

continued consolidation in the service provider market. During the last few years, the industry has been quite active in the areas of infrastructure standardization, virtualization and consolidation.

The rise of Google and Facebook over the past 15 years is a testament to not only the power of innovation, but also the need to constantly change to stay ahead of disruptive competition. However, many businesses suffer from "status quo bias" or the preference to keep doing what they have always done, either through the fear of change or because current practices and behaviors are moderately successful, so why change?

Is important to note that one of the most dangerous phrases in the English language is "we've always done things that way" and this thinking has led to some of the greatest collapses of companies in the past 20 years, such as Borders, Blockbuster and Eastman Kodak.

In view of the ongoing market challenges, the technology industry seeks a new wave of innovation that maximizes on what technology makes possible today in order to increase their customers' efficiencies, reduce their costs and assist them in gaining greater market share. In doing so,

the technology industry will generate more revenues and increase the return on investment for their own shareholders.

SMEs represent up to 80% of employment in many countries. These enterprises are the future wealth generators of the world. While the technology sector has ingeniously created innovative and highly sophisticated vertical supply chain solutions used by many companies globally, these systems are costly and typically out of the reach of most trade participants causing them to be excluded from global value chains. In fact, 90.4% of the global value chain participants do not have a vertical system.

However, cost is not the only hindrance to adopting technology. For example, in India which has a low cost technology environment, the use of vertical systems is low because they have not been built to meet the demanding high quality information requirements of today's fast paced global value chains that manage the horizontal process of trade.

Since trade is a horizontal process involving 19 industry trade clusters, there is a tremendous opportunity for the world's technology firms to partner together under one roof and develop new processes and business models towards building the applications demanded by the real economy participants at the ground level.

“
VALIDATED INFORMATION
CAN DE-RISK DOING
BUSINESS RESULTING IN
GLOBAL MARKET EXPANSION
”

By digitally connecting large, medium and small size companies through a horizontal trade platform, we can create an ecosystem that harnesses the huge volume of big data within the global B2B arena. This will then provide the seamless flow of validated, real time high quality information required by trade participants to make the right business decisions at the right time in the 21st century era. Digital trade will open new markets and enhance opportunities to all businesses, especially for SMEs, in global value chains.

The creation of high quality information will allow trade participants to reduce operating costs and de-risk doing business between the high, mid and low income countries. This de-risking effect will ease access to finance and insurance as well as create new market opportunities. Such a platform must also be provided free of cost to all trade participants through a new business model that incentivizes their participation, yet is able to sustain the deployment activities and handsomely reward the technology industry for their innovations.

The immense market potential for IT services companies offered by a horizontal platform will afford the ability to provide what their vertical systems customers have demanded for years, point-to-world integration. This increases the ability for IT services companies to sell more vertical system modules to their customers. In addition, the IT services companies can generate a significant source of new revenues, through a unique business model, by delivering thousands of applications for free, much like the apps provided through our smart phones today.

Technology companies need to take a fresh look and think ‘out of the box’ as to how they do business in order to capitalize on the opportunities that lie ahead in the ever changing global marketplace. By providing the required digital tools for all to use for free through a sustainable business model, we can increase trade efficiency and transparency that will enlarge the global economic pie towards achieving sustainable economic growth.

This approach will benefit all industries involved in trade - commerce, finance, insurance and technology - driving greater returns for their shareholders as well as rebalancing the global economy. Considering the interdependency of our global economy we must all strive to create productive communities by committing to business excellence setting the foundation for a prosperous tomorrow.

As stated by Ms. Ramos, the G20 and the OECD are set to embrace the digital era as a long-term endeavor. Therefore, now it is incumbent upon the technology industry to ensure the cost of technology does not hinder the economic growth of our world.

CAPTAIN SAMUEL SALLOUM
CO-CHAIRMAN, GCEL

“
DIGITAL ECONOMY CAN ASSIST
TO INCREASE THE WORLD'S
GDP BY 17% IN 2030
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HARNESSING THE POTENTIAL OF THE DIGITAL ECONOMY

THE GLOBAL SOLUTION FOUNDATION FOR SUSTAINABLE ECONOMIC GROWTH HAS STARTED

CAPTAIN SAMUEL SALLOUM - GCEL CO-CHAIRMAN

Following more than 10 years of R&D, global experts from several fields including trade development, technology, and finance have contributed their collective expertise towards achieving sustained economic growth by digitizing the USD 140 trillion B2B market place.

These exhaustive efforts have resulted in the creation of the required Global Solution Foundation to connect the strengths of the high, mid and low income countries towards rebalancing our global economy and creating economic prosperity for all.

This Global Solution Foundation encompasses the following four main pillars:

The first pillar includes defined and achievable targets that are necessary to create a huge win-win value proposition across all world communities to meet the ambitions of their citizens. Specific benefits of a tangible economic development solution that supports the United Nations' Sustainable Development Goals include but are not limited to:

- Increasing the world's GDP by 17% in 2030
- Creating nearly 300 million manufacturing, agriculture and service jobs
- Generating an annual USD 1 trillion SME Grant Fund to build SME capacity

The second pillar is a clear roadmap based on the economic strengths and demographics of each world region to reach the defined targets. In order to jump start economic growth, we must have a global campaign with a regional implementation program that includes a clear roadmap indicating the way forward from where we stand today towards a prosperous future in our time and for generations to come.

To reach the defined targets, pan-regional organizations entrusted by more than 150 countries including the Organization of American States, Organization of Islamic Cooperation, African Union, League of Arab States, as well as other leading organizations in China, India, and other G20 nations have published economic roadmaps, conducted national trade efficiency assessments and executed agreements to deploy a Digital Economy Platform delivering the defined benefits throughout the Americas, Asia, Europe and Middle East / Africa.

The third pillar encompasses the required digital tools delivered by a trusted network from around the globe for use on the roadmap to reach the defined targets. The tools must be provided free of cost to the end user and at the same time delivered by the technology industry maximizing on what technology makes possible today and in the future. These tools include the deployment of a Digital Economy Platform that has been defined by the real economy participants at the ground level and where the policy makers have identified the importance of today's 21st century technology to create dynamic, cooperative and inclusive ecosystems.

Finally, *the fourth pillar* is the global consensus of the foregoing that can be viewed from the following perspectives:

- Global Policy Adoption: G20 leaders agree that the Digital Economy must be the focus of our efforts to re-energize the global economy.
- Global Deployment: 75% of the world's citizens through their pan-regional organizations entrusted to implement regional economic development plans have executed agreements and published economic roadmaps to deploy the Digital Economy Platform.
- End-User: Trade participants at the ground level representing 78% of the world's GDP have defined the required digital tools to reduce their trade costs and increase trade. This is evidenced by the G20 Nations' Case Study conducted by 71 ministries, NGOs/IGOs and private sector experts, wherein 90% of respondents stated that they lack digital integration into the global value chains and 94% have commonly agreed as to the digital tools they need to do a better job.
- Technology Industry: 26 of the world's leading technology firms have executed strategic agreements as a first step to be selected through an equal opportunity process to work together under one roof to deploy the defined tools. These firms recognize the value of the required Digital Economy Platform solution, realize they cannot deploy the solution alone and can more than double their earnings.

It is important to note that since trade is of national security importance for any nation, it is impossible for one country or one technology company, no matter how big they are, to deploy the Digital Economy on a global scale and maintain continuous and sustainable access, while offsetting monopolistic and geopolitical concerns.

The deployment of the required solution must include the participation of all forms of organizations, working in concert together capitalizing on each organization's capabilities and jurisdiction. This collaborative effort must include an independent global monitoring mechanism to offset geopolitical and monopolistic concerns while at the same time ensuring rapid global deployment, providing benefits to all participants in the B2B marketplace.

In addition, since information is the currency of the future, the privacy and security of trade data must be protected and securely exchanged. Therefore, the deployment of a digital platform must embrace a Global Data Security Standard that includes: a Consortium of Globally Balanced Ownership, a Council of Fiduciary Governance, and a Committee of Technology Governance Board Experts, together offsetting geopolitical and monopolistic concerns. This is further coupled with a Controlled Segregated Technology Development process and Continuous and Comprehensive Audits to ensure data can be safely exchanged throughout the world with confidence.

All of the aforementioned represent a multi-layered mechanism ensuring that data security is maintained and that individuals' and companies' data privacy is protected.

In summary, the Global Solution Foundation will unleash a new era of 21st century trade efficiency through a global economic development program with defined targets, multiple economic growth road maps that address the needs of any region, country or business, thus rebalancing the global economy. With the needed digital tools validated through a global consensus and delivered by a trusted network of the world's top technology firms, we can achieve sustainable economic growth by -

**Connecting The Strengths Of The World
Community Creating Wellbeing Across Humanity**



Human Bionics

Authored by: **Dr Robyn Stokes**

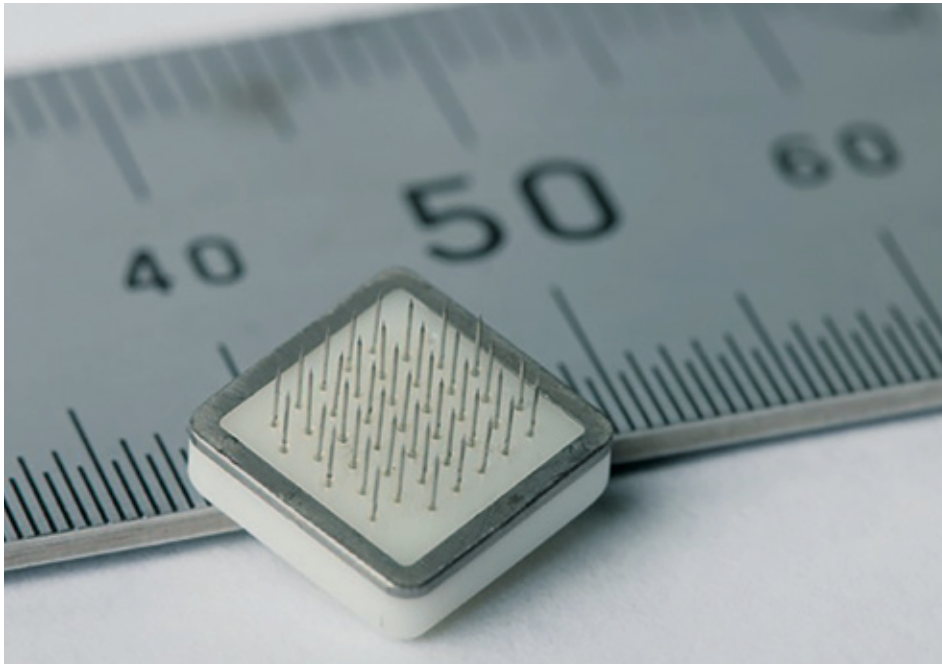
Converging technologies and human bionics: A future where no one is 'left behind'

Australia's human bionics interface alliance is gaining momentum, inviting and stimulating new scientific and commercial partnerships.

Bionic Eye

Futurist and bestselling author, Ray Kurzweil speaks of 20,000 years of progress happening this 21st Century.....and it's not just possible, it's probable. Exponential growth in technology made possible by the Internet of Things (IOT) is set to deliver extraordinary shifts via big data analytics, artificial intelligence and robotics and in turn, unstoppable changes in global health care. While there are ethical and practical questions ('do we need a new definition of what it is to be human?' and 'will we work well with our robotic colleagues?'), a convergence of technologies will transform our everyday lives and health in ways we can barely imagine. Ignoring change may look like a safe, albeit unadventurous haven, but it is not an option. Breakthroughs in deep learning, robotics, digital biology, nanotechnology, neuroscience, bionics and additive manufacturing are converging and it is time for 'moon shot thinking' on what this will mean for humanity. What are the seemingly impossible problems that we will solve as humans and artificial intelligence collide? What are the step-wise changes in the design and delivery of healthcare solutions and changes in the way we manage global health that these converging technologies will bring?

Germany has given the issue of global health 'top billing' during this year's G20. The 2017 program of G20 meetings has overtly recognised the responsibility of the Group of 20 for human health as a pre-condition to development. Respecting the UN concept of universal health coverage and the 2030 Agenda Principle of 'leaving no one behind', 2017 is a landmark year of G20 deliberations on health. For G20 leaders, strengthening public health systems and universal access are high priorities along with achieving a better understanding of social, environmental and economic determinants of health and disease. Equally important though in managing change are robust strategies for surveillance of global health issues and greater collaboration and information sharing on technological change. With the risk of pandemics and anti-microbial resistance, crisis preparedness for global health emergencies is a number one priority. However, technology-driven collaboration on healthcare is arguably a key plank in crisis preparedness and at the same time, a powerful way to develop breakthrough healthcare solutions.



A Monash Cortical Electrode array or 'tile' for the cortical bionic eye. Multiple tiles can be placed in the visual cortex of the brain.



Dr Dimity Dornan, AO, Founder of Hear and Say and the Human Bionics Interface alliance

●● *IN DR DORNAN'S WORDS, HEALTHCARE NEEDS ARE "HIGHLY COMPLEX AND THIS BRINGS THE NEED FOR RICH INTER-CONNECTIVITY (OF SCIENCE AND TECHNOLOGIES) TO DEVELOP SUCCESSFUL BIONICS DEVICES, ORGANS AND LIMBS.* ●●

In particular, this century's fourth industrial revolution (the Internet of Things) will bring many new breakthroughs in human bionics with new smart devices, bionic organs and limbs, bio-fabricated body parts and advanced prosthetics enabling those with complex disabilities to live an ordinary life. For Australia's Dr Dimity Dornan, AO, founder of Hear and Say (globally acclaimed for teaching children to hear and speak using the bionic ear), converging technologies and digital healthcare hubs are key infrastructure to realise her wider vision for human bionics. During last year's G20 in China, Dr Dornan highlighted the tsunami of human bionics breakthroughs that the marriage of nanotechnology ('nano'), neuroscience ('neuro') and bionics ('bio') could bring and this year her plans for vertical and horizontal collaboration (bringing patients, scientists, entrepreneurs and investors together) are gathering speed.

An advocate for greater entrepreneurialism and investment in human bionics and accelerated partnerships to commercialise new devices and breakthroughs, Dr Dornan

has created a new organisation, Human Bionics Interface, to accelerate solutions for the millions of people who live with untreatable physical conditions including missing or diseased limbs and organs. With exponential changes in technology, the bionic man or woman is no longer science fiction. In 2017, medical scientists, inventors and technologists are augmenting and enhancing the function of many organs and limbs and achieving astounding results with functionality and movement.

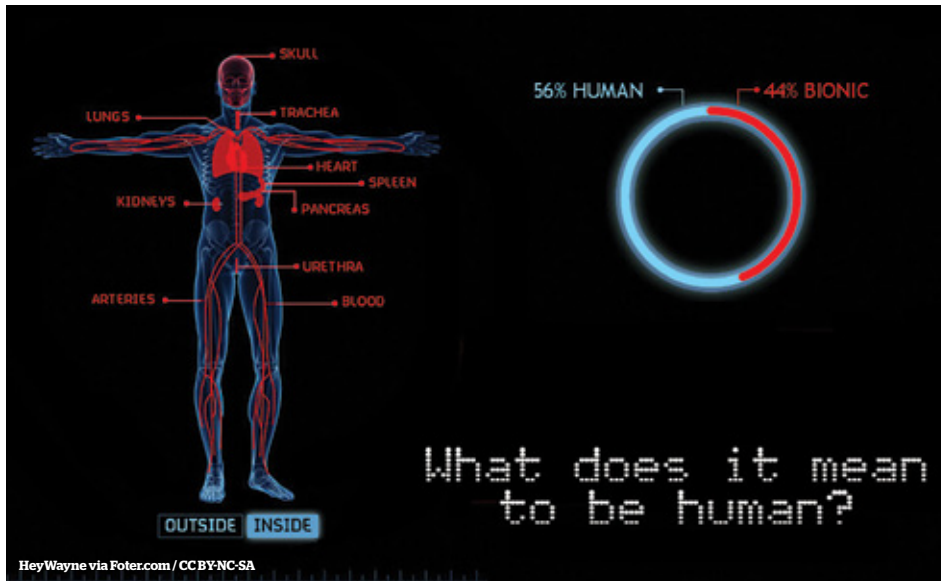
Especially exciting advances and new opportunities for bionic solutions exist in hearing and vestibular systems, in vision with the bionic eye and improved optogenetics in bio-fabrication and prosthetics (creating and augmenting body parts and limbs), in neuromodulation and neuroplasticity, deep brain stimulation and many other areas. Brain mapping brings with it the promise of even greater things to come. Neural prostheses already make it possible for nerve messages to be transmitted from the brain to the hand.

Australia has already developed and commercialised a number of 'firsts' in

medical science starting with the Cochlear implant (bionic ear). More recent science and medtech relationships have also led to ground breaking work on artificial organs e.g. the bladder, pancreas, lungs and kidneys. In 2017, the Australian-invented 'Evoke' spinal cord system is nearing commercialisation. Evoke will provide the first true, closed-loop neuro-modulation system enabling electric impulses to stimulate the spinal cord to mask or interrupt pain signals. In recent months, Bionic Vision Australia (BVT) has also received US\$18m in funding for a further clinical trial of a next generation bionic eye and its commercialisation. Technology from the Melbourne-based Bionics Institute, the clinical expertise of the Centre for Eye Research Australia and vision processing software of Data 61 underpin this exciting commercial venture.

According to Dr Dornan, the 'star gates' to the future in human bionics lie in understanding the brain and 'befriending' the complex links between thought, action and human response. "Powerful results in the decade ahead will come from brain mapping work already happening in the United States, Australia and China and from the mass participation of health consumers (individuals from all walks of life) already using digital avenues such as social media to involve themselves in a shared search for 'tailor-made' bionics solutions. Further advances in thought activation software >

Human Bionics



will enable the brain to connect with an even wider array of complex bionics devices. Australian life sciences entrepreneur and advisor, Dr Peter Riddles sums up the opportunity: “For millennia, human beings have interacted with machines, albeit remotely to achieve things that would not otherwise be possible. Going forward, bionics will enable ‘machines’ to become more personal and connected, enabling all people to realise their greater potential.”

Dr Dornan says her focus in a Phase 1 Action Plan for Australia’s Human Bionics Interface is complex disabilities (linked to hearing, vision, movement and a range of

so far untreatable conditions) and ways that the ‘big data’ value chain in global healthcare can unleash new partnerships to speed up the commercialisation of bionics devices. Linking key players in Australia’s healthcare ecosystem and medtech community with global tech giants such as IBM and Google are in sight along with new levels of cooperation across geographic boundaries. Much greater collaboration will be needed between bionics users, scientists and inventors and for this reason; the real game changers will be digital health tech hubs across continents and within these hubs, digital healthcare platforms.

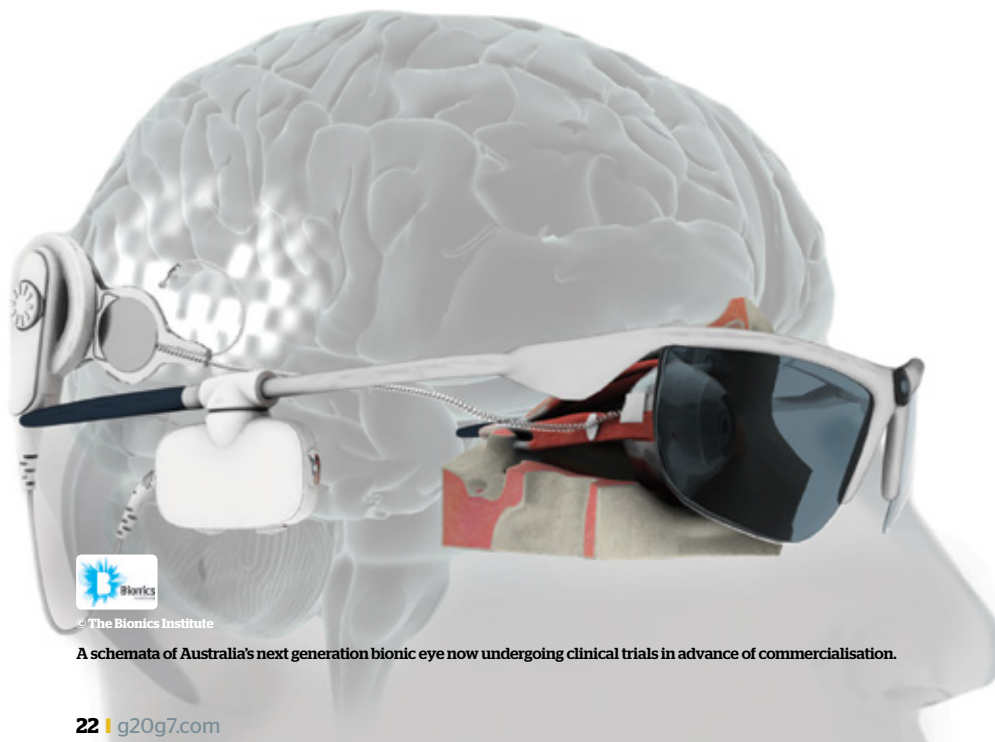
In Dr Dornan’s words, healthcare needs are “highly complex and this brings the need for rich inter-connectivity (of science and technologies) to develop successful bionics devices, organs and limbs. The challenge is twofold... firstly, to comprehensively tap big data on the needs of health care users and their clinicians and create new multi-disciplinary knowledge banks and secondly, to synthesise and respond to that knowledge with advanced bionics solutions that combine powerful, but fragmented technologies”.

There is no doubt that new digital health platforms (and even greater participation in social media) will see consumers getting very hands-on, working directly with experts in the virtual world to co-create solutions to complex health issues. In ‘Healthcare Reimagined’, Ernst and Young speak of a new participatory health ecosystem, a profound and disruptive change in the patient-doctor relationship and a change in the patient-scientist-manufacturer relationship that has the capacity to transform the lives of many people living with disabilities.

Dr Dornan says the Human Bionics Interface alliance aims to “bust the silos and bring change-makers together in the physical and virtual world to accelerate solutions. Australians are outgoing by nature and the drive to form new partnerships in human bionics is palpable. While it is early days, we are facilitating new partnerships and seeing more bionic technology inventions in the marketplace – it is only through commercial release that the world’s bionics discoveries and new devices can help those with disabilities in developed and developing nations. This is not just a goal for Australia, but rather a goal for multi-lateral partnerships”.

“We have a vibrant network of human bionics ‘change makers’ in Australia with a new Bio-Fabrication Institute at the Herston Health Precinct in Brisbane, Queensland; a well-established Bionics Institute in Melbourne, Victoria that is set to commercialise the next generation bionic eye; a burgeoning medtech cluster in South Australia and ground-breaking research occurring Australian universities”, she said.

Dr Dornan describes the new Herston Biofabrication Institute in Brisbane (a collaboration between Queensland University of Technology and Metro North Hospital and Health Service) as especially unique. The Biofabrication Institute will be a space where doctors and researchers are able to



A schemata of Australia’s next generation bionic eye now undergoing clinical trials in advance of commercialisation.

develop techniques to engineer new tissue using advanced clinical scanning, modelling and 3D printing. It will focus on developing biofabrication in three key areas: 3D imaging, 3D computer modelling and visualisation and 3D cell culture and 3D bio-printing to create customised engineered tissue implants, some using the patient's own cells.

Importantly, this will be the first time that a bio manufacturing institute has been co-located with a high-level Australian hospital, in this case the Royal Brisbane and Women's Hospital on the Herston precinct, one of the largest health precincts in Australia. The new facility is set to catapult Queensland onto the global stage providing exciting opportunities for scientists and clinicians to be employed in cutting-edge research and attract significant private sector and philanthropic investment. Associate Professor Mia Woodruff from QUT's Institute of Health and Biomedical Innovation has tipped the Institute to become "a world leader in tissue regeneration attracting \$10-15 million (Australian dollars) each year". She says the Institute will also serve as an education hub for STEM disciplines and lead to the development of next-generation robotic surgery and bionics through close working relationships with industry partners.

Australia's G20 in 2014 saw the first G20 Global Café and the inaugural Innovation 20 held in Brisbane, Queensland alongside the G20 Leaders' Summit. These events paved the way for an exciting new international dialogue between scientists, clinicians, inventors, the start-up world and corporate investors. A robust dialogue ensued on technology-enabled change and new disrupted business models that extended to the life sciences, medtech and the field of human bionics. Subsequently, the China G20 led to further engagement on innovation and a meeting of international brain mapping specialists.

Australia's G20 presidency meeting has continued to have flow-on effects for science and for major scientific events. Brisbane's success in hosting the G20 Leaders' Summit and the G20 Global Café were pivotal factors in Brisbane securing a multi-year contract to stage the highly acclaimed World Science Festival. In 2017, this Festival attracted scientific luminaries from across the globe that headlined performances, debates and scientific demonstrations while innovators across the scientific spectrum shared their knowledge at a range of events. The Festival



Associate Professor Mia Woodruff of the new Biofabrication Institute at the Herston Health Precinct in Brisbane, Australia.

brought \$5.1 million into the Queensland economy in 2016 and the attendance of over 180,000 people has brought even higher economic returns to the state this year. Professor Suzanne Miller, Queensland's new Chief Scientist and CEO of the Queensland Museum who negotiated to bring the World Science Festival to Australia sees human bionics as "a vital area of scientific endeavour in Australia, a fertile ground for new public-private partnerships and an arena where further entrepreneurialism and commercialisation will occur".

Next year, the state of Queensland will again play host to an international dialogue on innovation (including human bionics breakthroughs) at a Commonwealth Innovation Forum held alongside the Gold Coast 2018 Commonwealth Games (GC2018). Mario Pennisi, head of Life Sciences Queensland and founder of the Innovation 20, will spearhead the Commonwealth Innovation Forum, a dynamic event he says is designed to "explore life sciences innovations that will help to feed, fuel and heal the world's people living in Commonwealth nations and beyond. Human bionics innovations

are especially topical in the world of sport with many flow-on benefits for technology-enabled sports participation".

Dr Dornan, as the founder of Human Bionics Interface, sees even greater opportunities for Australia and other G20 nations arising from the renewed focus on global health by G20 leaders. According to Dr Dornan, G20 meetings in the 'Development Track' can serve to highlight the importance of continued collaboration on technology enabled healthcare including human bionics.

"This is a life science domain where much can be achieved on the UN goal of 'leaving no one behind'. Greater access to the bionic ear and with that, the ability for more people to hear and speak in developing nations and, in time, access to the bionic eye and other technology enabled health solutions among impoverished people will redefine life's opportunities. While the challenges are immense for developing nations, even low level engagement in digital hubs for health innovation will augur well for those who would otherwise be 'left behind'.

With exponential shifts in technology, Dr Dornan sees students and scientists in developed and developing nations becoming active contributors to human bionics innovations and gaining direct benefits from the dialogue and inventions that emerge from digital healthcare hubs. Forward strategies of the Human Bionics Interface organisation led by Dr Dornan will focus directly on achieving greater horizontal and vertical collaboration (via real world events and digital platforms), boosting entrepreneurialism, stimulating cross-border innovation and encouraging faster commercialisation of bionics devices. ■

For further information on membership or involvement in Human Bionics Interface, contact Dr Dimity Dornan at: dimity.dornan@hearandsay.com.au

●● **GOING FORWARD,
BIONICS WILL ENABLE
'MACHINES' TO BECOME
MORE PERSONAL AND
CONNECTED, ENABLING
ALL PEOPLE TO REALISE
THEIR GREATER
POTENTIAL.** ●●

Dr Robyn Stokes is an Australian business strategist and foundation member of Bionics Queensland. Twitter: @brisrobyn

Sustainable Growth

Authored by: **Gianluca Riccio**

From the Low Growth Trap to Sustainable Growth: The case for a coordinated G20 policy approach

Business at OECD highlights the risk of missing out on SME potential if the G20 fails to address the unintended consequences of regulation, alongside access to finance and cyber risks.

In Brisbane back in 2014 G20 leaders committed to reforms to raise GDP by 2% by 2018. Since then implementation has been sorely lacking, in fact governments have often been going in different directions – for example, research from the OECD, WTO and UNCTAD, shows that 145 new trade-restrictive measures were applied by G20 countries between October 2015 and May 2016. The result is that when global leaders meet again in Hamburg in July 2017, they face a decidedly mixed economic picture.

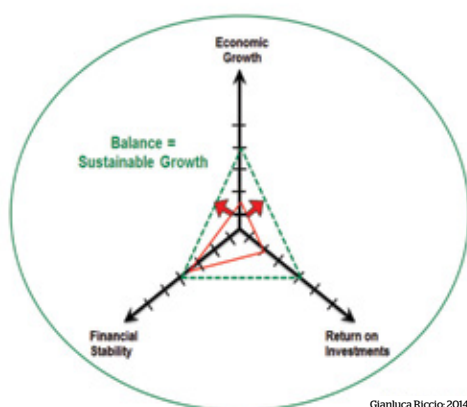
Business as OECD is clear that to meet the G20's growth target we need the rapid and internationally consistent implementation of well targeted policies that encourage private sector led growth. This is particularly true to

unlock the potential of small and medium-sized enterprises (SMEs), whose participation in global value chains (GVCs) not only supports growth in our economies, but also enhances their own productivity and innovative potential. In fact, GVCs offer an ideal platform from which to evaluate G20 policies and assess their end-to-end impacts, hence identifying unintended consequences. They represent a nexus between investment, innovation and trade and improving them offers a high potential to boost GDP, increase employment, and improve working conditions and long-term industrial development.

The G20 must translate broad-based growth sentiment into action on the ground encouraging governments and policymakers

to expand their focus from being the guardians of financial stability towards enablers of growth and investment. Indeed, the need to avoid parochialism is more important than ever in the current economic and political climate. In turn, the private sector must offer solutions and take more ownership of actions as well.

Identifying what governments should do, and how, to support SME access to GVCs was the focus of a senior level roundtable held at the OECD in March 2017, as a joint initiative between Business at OECD and the German B20. It focused on the recommendations needed to achieve a sustainable balance among financial stability, inclusive growth, and returns on investment by joining the dots across all the relevant policy areas.



A conceptual framework developed in 2014¹ and updated to capture the G20 priorities in 2017²

Building Resilience: The G20 has set itself the task of growing economies and strengthening stability of their financial architecture. Both are needed, but it is their balance that ensures resilience. Focussing only on financial stability without proportionate economic growth policies, may result in safe but stagnating economies.

Improving Sustainability: Growth is not only important in itself; the type and quality of growth also matters. Good quality economic growth is achieved through longer-term investments (e.g. digital, infrastructure, global health, climate and energy), which can only be obtained by ensuring proportionate return on such investments.

Assuming Responsibility: In an increasingly interconnected world, such return on investments need to be balanced with the required stability (not just financial) of the affected markets, as impacts go beyond the investments' immediate boundaries. Hence tackling the causes of displacement, fighting anti-corruption and terrorism, and targeting agriculture/food security.

¹The 3-axis (Economic Growth, Financial Stability & Return on Investment) equilibrium concept was developed by Gianluca Riccio in 2013 as part of the BIAC work on unintended consequences of Financial Regulation - BIAC (2014) "The case for a more coordinated approach to financial regulation: A BIAC discussion paper"

²G20 (2017), Priorities of the 2017 G20 Summit.

WE DEVELOPED THREE OVERARCHING RECOMMENDATIONS:

RECOMMENDATION 1: Improve coordination and consultation in implementation, and better assess the impact of regulation to minimize cross-border and cross-policy inconsistencies, and thereby minimize unintended consequences.

Within the framework of reinforcing financial stability, economic growth, and return on investments there is a critical need for broader and independent (from those bodies setting policy) economic impact assessments. This is needed to determine the cumulative effects of G20 policies and other regulatory initiatives – both domestically and across borders.

Similarly, the implementation phase of financial and tax regulations would be significantly improved by introducing an international, principles-based implementation process, and a more formal mechanism for continuous and systematic cross-border dialogue between national regulators. Minimising inconsistencies by applying these measures would ensure reduced compliance costs, both direct and indirect, for SMEs and ensure alignment between regulation 1.0 and 2.0.

RECOMMENDATION 2: Raise SME access to finance, both debt and equity, and skills through an integrated financing approach,

fostering timely payments, and better leveraging opportunities offered by digital, trade finance and green finance.

There is a need for all actors to take action, rather than only focusing on measures for governments. The growing willingness of private and public stakeholders to undertake their own distinct voluntary initiatives needs to be encouraged. G20 policy approaches should enable, and not hinder, private sector-led initiatives. This does not mean a change of roles, but rather better leveraging successful or promising initiatives and sharing best practice.

A point in case is given by long-term investments: it is not sufficient to provide public funding, it is critical that funding is available in a regulatory environment that supports the long-term nature of such investments, e.g. regulations that support rather than curtail longer dated investment or equity financing.

RECOMMENDATION 3: Maximize access to data and sharing of information through digital platforms for a coordinated response to global challenges, including cyber security.

Leveraging the use of digital technologies and information exchange enhances the flow of financing, skills, and investment throughout GVCs - this is no longer an opportunity, but a “must” requirement in today’s world. However, there are material pitfalls to doing so, the most prominent being cyber security

risk. These can only be managed through coordinated efforts and we encourage the G20 to keep its emphasis on data coordination and harmonization. The G20 Action Plan on SME Financing, which provides a framework to facilitate dialogue between the relevant international fora and the G20 work stream, is particularly important in this regard.

These three recommendations offer medium-term guidance to G20 leaders as they look to improve global economic performance by supporting SME access to GVCs. To see real progress continuity between G20 Presidencies is paramount. The work of past taskforces must be reviewed and adequate forward momentum across Presidencies must be ensured. As we highlighted to the Turkish, Chinese and now German presidencies, policy consistency is a necessity for achieving a sustainable balance between financial stability, economic growth, and return on investment. ■

Gianluca Riccio, CFA is Vice Chair of the Business at OECD Finance Task Force, Member of the B20 taskforce on Financing Growth & infrastructure, and member of the B20 Cross-thematic working group on SMEs.



Global Trade

Authored by: **John Denton**

Building Bridges Between Nations

*The world we live in has been built
on the power of exchange.*



From the earliest sketchings in caves, we have exchanged ideas. By sharing stories throughout time, we have passed on wisdom to each generation. Without this exchange, each of us would have to learn about the world for ourselves, rather than standing on the shoulders of giants.

Global prosperity depends on extensions of this exchange – to goods, services and finance.

But this mechanism is being eroded by uncertainties and inconsistencies. The asymmetry between capital and investment in global infrastructure is a case in point. There is no shortage of capital but there are many impediments to creating a market for long-term infrastructure and green finance investments. There is no one overriding factor, more a series of systemic challenges.

Poor planning and scoping by governments clearly limits the number of bankable projects. This alone however, isn't the determining factor. Throw in a lack of liquidity in long term investment asset classes with the need for a broader range of financial instruments and projects simply go unfunded.

The B20 Financing Growth and Infrastructure Taskforce has identified this imbalance, among several G20 must strive to address. Inconsistencies around the rules relating to cross-border investment also need to be tackled, as do the inherent challenges to economic growth in traditional financial regulation. B20 has set out a roadmap for governments to follow. It is a bold agenda.

Asymmetry Between Capital and Investment

If the G20 is to remedy the issues outlined above, it must create more fertile ground for bankable infrastructure and green projects. There are three immediate ways in which it can do this. Multilateral Development Banks must be encouraged to move away from merely investing in infrastructure to actually facilitating private sector finance in infrastructure. Secondly, communication is key and much needs to be done to improve the availability and quantity of information about projects and pipelines - adopting international best practices. Thirdly, G20 needs to encourage the development of a green finance market by standardising definitions and disclosure requirements and adopting appropriate capital requirements for institutions.

●● CROSS-BORDER INVESTMENT IS IMPEDED BY THE COMPLEXITY AND INCONSISTENCY OF RULES. THIS WILL ONLY INCREASE AMID THE RISE OF GLOBAL PROTECTIONISM. ●●

Inconsistency of Rules for Cross-Border Investment

Cross-border investment is impeded by the complexity and inconsistency of rules. This will only increase amid the rise of global protectionism. The lack of adequate risk protection against regulatory and political instability is matched only by the lack of effective dispute resolution mechanisms. Greater certainty and cooperation would facilitate cross-border projects. But amid all this uncertainty in the world, how do we go about this? Creating a predictable international tax environment that prioritises consistency would be a start. There needs to be a greater focus on simplification which will prioritise economic impact and compliance capacity. The World Bank Group has a part to play here too - improving conditions for domestic and private investment in emerging markets. Why not commission it to negotiate country-specific compacts with African states?

These compacts would address principles for tax and regulatory stability, anti-corruption measures, foreign investor protection, insurance by Multilateral Development Banks and the training of government officials in best practice project finance and PPP frameworks.

Increasing Funding to SMEs and Emerging Markets

As part of global measures to increase financial stability, banks are subject to greater capital requirements. As a consequence of this, they have a reduced capacity to fund infrastructure activity. Fintech may bridge the gap here by increasing the availability of infrastructure funding to SMEs and emerging markets. However, regulators will need to consider the opportunities and risks arising from digitised financial services. G20 has a role to play in this balancing act, addressing inclusive growth and digital innovation. There are three areas that immediately come to the fore.

There is a clear need for greater coherence between the regulatory frameworks in G20 nations. One way of promoting greater cross-border dialogue would be through the Financial Stability Board. Perhaps it could be tasked with establishing a model for this,

providing the private sector and regulators with a platform for deeper engagement. Speaking of the FSB, could it—or perhaps the International Organisation of Securities Commissions—drive a shift in regulatory focus to ease the process of digitalisation, while ensuring consistency across borders, levelling the playing field across institutions. Underserved markets in emerging and developing nations need to be part of this, through the promotion and development of digital financial inclusion.

Growth and Stability

Greater openness benefits many aspects of economies and societies. More opportunities for exchange mean lower production costs, less resource consumption for production, as well as technology and knowledge transfer. The challenges of globalisation cannot be solved within borders.

In exchange for these ideas, B20 is seeking a dialogue that leads to closer alignment between capital and investment, greater consistency for cross-border investment and a more innovative approach to financial regulation, one which supports both stable and underserved markets through digital inclusion. Investment in infrastructure has a multiplier effect, generating lasting economic, social and environmental benefits. It is critical to global stability - something the world needs right now. ■

John W.H. Denton AO

was recently elected Vice-Chairman of the International Chamber of Commerce and is one of the two originating members of the B20 - the business reference group of the G20. He is a Partner and the Chief Executive Officer of Corrs Chambers Westgarth, the leading Australian independent law firm. John was appointed as an Officer of the Order of Australia (AO) last year; the highest recognition for outstanding achievement and service in Australia.



Globalization

Authored by: **Chris De Noose**

Making Globalization Work for Everyone: Locally Focused Banks' Role

People are seeking solutions to cope with globalization. Perhaps that is why, more than ever, the G20 process becomes even more important.

A force for shaping global financial policy, the G20 impacts greatly the 7,000 locally focused banks that make up the World Savings and Retail Banking Institute and the places where they serve. When we share our G20 messages with policymakers and stakeholders, two big themes are always conveyed.

First, we always discuss better regulation. More specifically, that any new and existing legislation should apply the principle of proportionality. In general, this principle has been well placed in the mind-set of decision makers. We find that in Europe, however, savings and retail banks, with normally less-complex models, are hit with the same post-crisis banking rules designed for globally active banks in mind. That mismatch can and should be fixed.

Second, policy should keep in mind the special role savings and retail banks play in local communities and local economies. Building on that, policymakers should see savings and retail banks as an agent to relay the benefits of Globalization at local level. A big part of that revolves around expertise in lending to the real economy, namely SMEs.

People Increasingly Reject Globalization

To the man on the street, they have little connection with G20. They are, however, increasingly perceiving Globalization as a threat. We have witnessed results in UK and America as case in point.

There is a real disconnect between people and the facts about Globalization. First, it creates efficiencies and opportunities from open markets. Globalization creates wealth and foreign currency to local economies when they buy local resources, products and services. The extra money created by

this investment can be spent on education, health and infrastructure. Globalization makes people more aware of the world around them. The good side of globalization sets the world economy into a virtuous cycle of income and employment growth.

With all the pluses of Globalization, so much of the time we hear the minuses. People hear and see first-hand the risks and uncertainties that Globalization brings. But it doesn't need to be that way.

That is where locally focused savings and retail banks come in. Close to the customer, and in their communities for the long haul, they are ideally placed to help people better navigate their financial future in an interconnected world. Local banks give citizens a chance to participate in the real economy, to start a business or expand a business and seek export markets. The Economist magazine once noted that SMEs, especially mid-sized firms, hire people regardless of the business cycle. Their approach is in contrast to large companies, who oftentimes slash payrolls when times are tough.

Despite so much upside, SMEs remain in a funding challenge, especially in developing countries. The International Finance Corporation reports that around two-thirds of SMEs in poor countries cannot borrow as much as they would like, compared with a sixth in the rich world. The credit gap in developing countries was about \$1 trillion in 2011¹, while the credit gap for microenterprise was estimated at more than \$300 billion.

Who is best to bridge that gap in lending? We argue that it is local banks. They know best when it comes to how local businesses work and spend a lifetime doing it. Our just-published Institutional Position to the G20 offers solutions to help narrow the gap.



●● *TO THE MAN ON THE STREET, THEY HAVE LITTLE CONNECTION WITH THE G20. THEY ARE, HOWEVER, INCREASINGLY PERCEIVING GLOBALIZATION AS A THREAT.* ●●

Proportionality and Financial Market Stability

Financial market stability is another pressing issue. Bank lending remains the primary source of SMEs finance, but a wave of new regulations proposed under Basel III have not helped our cause. Hastily prepared during the crisis, they lacked the right balance between mitigating risk and fostering growth.

The post-crisis rulebook needs a second look. Policymakers have to check them for balance and whether they are proportionate. For new banking rules, they must be pre-tested



via detailed impact assessments that take into account the impact on smaller and less complex banks as well as the interactions between different rules. A pause is also needed on banking regulatory reforms at international level to focus more on unleashing more economic growth.

Most agree that global fora like G20 are crucial to consistent global guidelines. But those guidelines have to be set while avoiding the pitfall of one-size-fits-all. Regional and national level tweaks to rules will have to be made. Relatedly, there is real need as well for the principle of proportionality and should be weaved into all aspects of regulation.

Infrastructure Finance and SMEs Finance

Like the G20, addressing infrastructure project finance is high on our policy radar as well. We acknowledge that projects to build roads, bridges and schools can no longer be financed through bank loans alone. New rules and the economic climate have shown that there is an urgent need to look beyond the traditional

bank-based model. Our policy idea is straightforward: partnerships between banks and institutional investors should be incentivised to benefit from the know-how of banks and the investment capacity of institutional investors.

On diverse non-traditional bank financing instruments and channels, we see the vast majority of SMES – normally the start-ups and smaller sized firms – sticking to their bank for financing. Alternative sources of finance such as capital market instruments in a broad sense may be useful for some SMEs in some stages of their life cycle, but should come as a complement to bank lending.

Green, sustainable finance activities is also important, especially when it comes to new products that promote areas like energy efficiency.

Thriving Locally

Globalization has proven to make the world more prosperous and move society forward, but some still feel left out. Locally focused banks can help bring those people in and

more fully participate in the local economy. They can do both better with the right rules framework. But if that framework is missing, expect people to push back even more against a globalised world. ■

¹ <https://www.ifc.org/wps/wcm/connect/4d6e6400416896c09494b79e78015671/Closing+the+Credit+Gap+Report-FinalLatest.pdf?MOD=AJPERES>

Chris De Noose is Managing Director of the World Savings and Retail Banking Institute and the European Savings and Retail Banking Group.



A member of the European Banking Industry Committee, European Payments Council and The Business and Industry Advisory Committee to OECD (BIAC), he serves on the boards of the Hochschule der Sparkassen-Finanzgruppe and Child and Youth Finance International. Secretary General of the Mediterranean Confederation, he is also Executive Committee Chairman of WSBI Advisory Services.

Shared Value

Authored by: **Cherie Nursalim**

Better Business, Better World

Inviting CEOs to join BSDC, Giti, Unilever and others to adopt the SDG Pyramid as a path to our shared value future.

“In the fourth industrial revolution, there is a need for business to be reimagined,” Sunil Mittal, Chairman of the International Chambers of Commerce (ICC) conveyed at a strategy meeting in Bangkok. A transformative approach is proposed that includes reimagining business in the data, digital, sharing economy revolution such as our foray into digital learning and certification launching ICC Academy platform in Singapore to educate SMEs and professionals from trade finance to fintech. Reimagine business also revisits the core founding principle of the ICC as merchants of peace (through partnerships), to incorporate ecological and social realms as it played a key role as merchants of sustainable development in support of the United Nations 2030 agenda.

These three realms elegantly portray the UN seventeen sustainable development goals (SDG) through the SDG Pyramid. The first ten goals represent humanitarian, economic development, inclusiveness and people issues, the next five goals represent sustainability and ecological issues, and the last two goals on peace and partnership reflect spiritual and value systems.

As the world’s largest business organization with 6.5 million members across 130 countries, the International Chambers of Commerce is taking a representative role at the United

Nations for business in COP climate meetings and in the promotion of the global goals.

What is clear is that ‘Reimagine Business’ is not only good for public image, it is a matter of survival. The great news is that it makes good business sense.

Better Business Better World highlights the opportunities. The SDGs open the sixty biggest market “hot spots” worth up to US\$12 trillion a year in business savings and revenue and 380 million jobs opportunities by 2030. Led by the Business and Sustainable Development Commission with UN Foundation and Systemiq as managing partners, the report is supported by the Bill and Melinda Gates Foundation, Rockefeller Foundation, Global Green Growth Forum and governments agencies from Australia, Netherlands, Norway, Sweden, and United Kingdom.

The Commissioners, of which I am honored to be a member of, is led by Lord Mark Malloch Brown. He assembled distinguished leaders of business, finance, civil society, and international organizations International Chambers of Commerce Secretary General John Danilovich, Paul Polman of Unilever, Ho Ching of Temasek, Jack Ma of Alibaba, Lise Kingo of UN Global Compact, Sharon Burrow of International Trade Union Confederation, Mary Ellen of Women’s World banking, Gavin Wilson of IFC Asset Management, Richard Edelman, Hendrik du





Toit of Investec, Hans Vestberg of Ericsson, Mats Granryd of GSMA, John Fallon of Pearson, WEF Young Global Leader Helen Hai among other.

Business needs to think beyond beating the quarterly profit target to focus on the shared value Sustainable Development Goals that are set for 2030. Business leaders have to ask what the SDGs mean for their own companies and sectors. They need to recognize that solutions call for collaboration across sectors beyond business and government to civil society. “Business leaders need to strike out in new directions to create opportunities aligned with sustainable and inclusive economic models.”

Those at the leading edge of business see that sustainability matters for becoming a successful business and it matters for our communities.

One of the hotspots in the report is “cultural tourism”. Giti Group is undertaking the opportunity to develop an Island of Happiness, the Kura Kura Bali Island development in the heart of prime Bali. The initiative is an eco-development project that is premised upon the Balinese Tri Hita Karana or Three Ways to Happiness values that align with the Balinese-Hindu based philosophy through the harmony of three realms - people harmony, ecological harmony, and spiritual harmony.

The SDG Pyramid aligns the seventeen SDGs across these three harmonies.

Launched by the Indonesian President at the APEC in Bali, Kura Kura Bali will house the United in Diversity Creative Campus and the UN global initiative Sustainable Development Solutions Network Southeast Asia, with a mission to advance the achievement of the SDGs. A global Island of Happiness crowdsourcing challenge will be launched in collaboration with Peter Diamandis to crowdsource solutions for this eco development around the G20.

We invite CEOs to adopt and promote the SDG Pyramid! Please join the Business and Sustainable Development Commission, Giti, Unilever and others to sign up before the UN General Assembly in September 2017 and Davos next year. ■

Cherie Nursalim is Vice Chairman, Giti Group, Chairman for UN Sustainable Development Solutions Network Southeast Asia, Board Member of International Chambers of Commerce, and of the Business and Sustainable Development Commission. www.sdgyramid.org

Health and Development

Authored by: **Kimball Chen**

Africa Targets Clean Cooking

Energy access in Africa is not only a matter of energy policy, it is an urgent health priority.

In 2017, with the promise of continued strong European support to drive progress on the UN Sustainable Development Goals, and with Germany presiding over the G20, it is an opportune moment to highlight the need to tackle the issue of household air pollution derived from cooking smoke. This is a key development issue that has risen to the forefront of the global development stage.

Recent WHO estimates show that between three and four million people per year - mostly women and children - die prematurely from the effects of household air pollution caused by cooking with solid fuels, almost exclusively in low and middle income countries. WHO reports also show that more than half of the premature deaths caused by pneumonia in children under the age of five are caused by soot inhaled due to household air pollution.

Across Africa it is a quiet, yet urgent, health crisis, punctuated by the sounds of wheezing from a child struggling to breathe.

There has been significant renewed international attention around the issue of energy access - including clean cooking - in recent years, leading to the adoption of UN sustainable Development Goal 7 (SDG7) focused on ensuring universal access to energy by 2030. Recent Sustainable Energy for All Global Tracking Framework reports developed by the World Bank reveal continued progress in access to electricity across the developing world, and particularly on the continent of Africa. But cooking energy access - and the health benefits it can bring - is not faring so well. Between 2010-2012, while 125 million people globally gained access to cleaner cooking fuels, predominantly in urban areas, the population increased by 138 million, negating those gains. Clearly, something must change.

The slow adoption rate for clean cooking technologies and fuels means progress is not yet on track to reach SDG7. This means that more people will cook using smoky solid fuels that take a toll on the environment and climate, due to CO₂ and black carbon emissions, and that exacerbate deforestation.

Equally, and arguably most, importantly their own - and their children's - health will suffer as a result.

At the same time, these sobering data present an opportunity: The ability to influence a younger generation growing up, who are not locked into traditional ways of cooking. They are more likely to be open to adopting a new approach, embracing cleaner technologies and fuels.

Recent studies have re-confirmed the health benefits derived from cooking with "BLEN" fuels - biofuels, clean burning LPG, electricity and natural gas, and the inability of solid fuels like wood and charcoal for cooking purposes to provide equivalent benefits, even when utilizing improved stoves. While a move away from fossil fuel use is a global imperative for electricity generation, in the context of clean cooking, leading global scientists and public health experts have recognized the benefits of LPG, especially, as a clean burning, low carbon, highly scalable and climate friendly solution.

Across Africa, countries from Cameroon to Kenya recognize the need to drive progress on cooking energy access, and to embrace clean-burning fuels. They have established targets for cooking with LPG to help as many of their people as can successfully make this transition (with or without subsidies) to do so. According to targets developed in country action plans formulated under the Sustainable Energy for All Initiative, countries like Cabo Verde have established goals for almost exclusive LPG use by their population. Cameroon has recently adopted a goal of 58% LPG penetration, up from 12% today, and Kenya has adopted a goal of 36% from an initial 11%. Burkina Faso and Niger have very high LPG targets for urban areas, and Nigeria and Togo include LPG as a key fuel in their mix to reach 80% and 75% clean cooking by 2030, respectively.

These countries clearly see the challenge. How can we best support them in this change process?



Recent work with the government of Cameroon by the Global LPG Partnership has shown that strong political will can drive the process of policy reform and national planning required to support more rapid uptake of clean burning cooking fuels and technologies. In the context of Cameroon this is not only driven by development objectives but by a recognition of the need to address increasing deforestation. This has led to Cameroon's adoption late last year of its first national LPG Master Plan. Investment in infrastructure across the supply chain - from port expansion to LPG cylinder filling plants - is also needed to ensure that the major advantages of LPG for clean cooking can be fully utilized, and help drive national economic development across the full LPG supply chain. Equally, innovative micro-financing schemes can assist low income households with managing the upfront costs of the transition. Mobile money technologies



●● ACROSS AFRICA, COUNTRIES FROM CAMEROON TO KENYA RECOGNIZE THE NEED TO DRIVE PROGRESS ON COOKING ENERGY ACCESS, AND TO EMBRACE CLEAN-BURNING FUELS. THEY HAVE ESTABLISHED TARGETS FOR COOKING WITH LPG TO HELP AS MANY OF THEIR PEOPLE AS CAN SUCCESSFULLY MAKE THIS TRANSITION (WITH OR WITHOUT SUBSIDIES) TO DO SO. ●●

enabling Pay As You Go approaches are showing early promise in this sector. Educating younger people in particular about the benefits of adopting clean burning fuels for cooking, and helping them know how to embrace clean fuels safely and sustainably will also need to be a key part of combined efforts moving forward, and thoughtful planning

across the full supply chain can help enhance gender inclusion.

With G20 support to strengthen international engagement on energy access, and particularly to embrace low carbon solutions like LPG for cooking, which is already used by half of the world, Africa's children – and the world as a whole – can breathe more easily. ■

Kimball Chen is Chairman of Energy Transportation Group, Inc. ("ETG") which develops liquefied natural gas ("LNG") and liquefied petroleum gas ("LPG") projects.



He presently serves as Chairman of The Global LPG Partnership, a UN supported Public Private Partnership leading global efforts to provide LPG to 1 billion people. Mr. Chen served as President of the World LPG Association ("WLPGA"), the global LPG industry association, 2012-2015. He advises governments on LNG and LPG policy issues and also serves on the International Chamber of Commerce G20 CEO Advisory Group, which provides policy recommendations to the G20 heads of state. Mr. Chen graduated from Harvard University with a B.A. (Magna Cum Laude) in 1973 and with an MBA in 1978.

Lead Feature / International Trade

Authored by: **Ana C. Rold**

The Future of Globalization and International Trade

Interview with Andrew F. Gelfuso, Vice President, Trade Center Management Associates (TCMA) Ronald Reagan Building & International Trade Center Executive Director, World Trade Center, Washington DC

Donald J. Trump's rise to the Presidency of the United States has required businesses to rethink globalization, especially as it pertains to international trade. In the past three months, scholars and experts have asserted that the election of Donald J. Trump has signaled a retreat for globalization. However, based on globalization trends and the fact that the global economy is more integrated today than during the peak of the early 20th century, what we will see is the pace of globalization actually continue to increase, with new opportunities and challenges arising for leaders.

While globalization has brought immense benefits to many sectors, certain countries and individuals remain vulnerable. How can societies best approach the challenges this presents?

We had the distinct opportunity to meet with a man at the center of global trade in Washington, Andrew F. Gelfuso, Vice President of Trade Center Management Associates (TCMA) and the Ronald Reagan Building and International Trade Center. Mr. Gelfuso is also the Executive Director of the World Trade Center in Washington, DC.

As Vice-President, Mr. Gelfuso leads the global mission of the Center while focusing on international business development, program promotion, business matchmaking, outreach, trade counseling, strategic partnerships, government and diplomatic relations. Under Mr. Gelfuso's leadership, the Office for Trade Promotion is responsible for driving the Congressional mandate of the Ronald Reagan Building and International Trade Center and for positioning the Center to be Washington's focal point for a wide array of international trade, cultural and educational programming. Mr. Gelfuso also steers efforts in marketing, media relations, corporate publications and resource development.

Previously, Mr. Gelfuso was the Regional Manager for Asia at the U.S. Government's Advocacy Center with the U.S. Department of Commerce. In this role, Mr. Gelfuso worked with U.S. companies on major projects and public sector procurements in Asia to ensure transparency and fairness on tenders and to counter foreign government intervention. His

countries of responsibility included: Japan, South Korea, Taiwan, Singapore, Thailand, Vietnam, Philippines, Laos, Cambodia, Australia, Malaysia and Indonesia. The Advocacy Center is the lead agency in the U.S. Government for private sector advocacy under the terms of the Trade Promotion Coordinating Committee (TPCC) and Mr. Gelfuso worked in close collaboration with the Commerce Secretary's office, USTR, the State Department, the

White House, and U.S. Embassy officials and other TPCC agencies during his tenure and contributed to \$35 billion dollars in successful transactions. During this time, Mr. Gelfuso passed the Commercial Foreign Service Exam and was offered a diplomatic assignment in Asia.

We asked Mr. Gelfuso about his thoughts on the future of international trade and globalization as a new administration takes charge in Washington.

The state of current and future of international trade and globalization has come under scrutiny recently. I would like to ask your comment on the following statements that many skeptics of globalization have made recently. Are they true or false and why?

ACR: Manufacturing jobs are the basis of American prosperity and outsourcing manufacturing means the demise of American economy. True or false?

AFG: False. By some estimates, the manufacturing industry and their related value chain colleagues in R&D, design, assembly, distribution, sales and service comprise up to one-third of the U.S. GDP. Further, less than 20% of all U.S. GDP is foreign trade and about half of that comes from the energy sector. The U.S. is moving more towards energy independence and consequently the reliance upon foreign trade is further reduced. While impact of the U.S. manufacturing industry is a significant component of a healthy domestic economy, up to twenty million U.S. jobs have been lost since 2000 due to outsourcing/off-shoring. The basis of American prosperity has been and will continue to be entrepreneurship, innovation and ingenuity across sectors including manufacturing, services, ICT, healthcare among others.

ACR: Imports make us poorer. True or false?

AFG: False. In general terms, imported goods and services offer the U.S. consumer a greater variety of items for consumption at a wider variety of price points. As real wages for the majority of Americans have increased very little in the past 20 years, lower priced foreign goods and services have helped keep the average American's purchasing power high. This has added to both their quality of life as well as the overall growth of the U.S. domestic economy. Supporting domestically produced goods and services is important in terms of developing an increased tax base, especially given the federal government's debt approaching \$20 trillion. Further, increased domestic production of goods and services goes a long way towards creating and supporting new and higher value American jobs. However, let's not forget that many of the items that may be considered to be "imports" are actually products and services that originated in the U.S. then were shipped overseas as part of an optimized supply chain for assembly into final products by lower-



Above: Night view of the Ronald Reagan Building and International Trade Center and the Washington Monument in Washington, DC.

Left: Andrew F. Gelfuso and Former Italian Prime Minister Romano Prodi at the Ronald Reagan Building in Washington, DC.

wage foreign workers in jobs that would otherwise be unattractive to the average U.S. worker.

ACR: Success of foreign firms always helps foreign countries; Success of U.S. firms always helps the U.S. economy. True or false?

AFG: False. The success of both foreign and domestic firms has the ability to contribute to both foreign and domestic economies. Foreign trade does not have to be a zero-net sum proposition. If properly structured it can be – and should be – a positive net sum proposition for both sides.

Having successful U.S. firms with high paying domestic jobs dispersed throughout the global value chain is an important part of the American economy, the same can be said of foreign firms with production in the U.S. As the largest consumer market, we possess the largest base of well-educated and well

trained workers worldwide. Foreign firms tend to pay high wages and naturally contribute to the U.S. tax base. Foreign investors provide a large influx of capital through direct investment in financial markets, real estate and development, tourism, education, health care, and other sectors.

ACR: For a sizeable portion of the U.S. electorate—as well as publics in other countries—globalization and international trade sound like a conspiracy theory. What drives, in your opinion, this dissatisfaction and fear towards globalization?

AFG: Globalization isn't explained well in sound bites. There are many views and explanations by smart reasonable people and organizations that contradict each other on what globalization even means, let alone if it can be labeled as either "good or bad." Let's review a bit of history to better understand

how we arrived to where we are today.

The global economic system has taken the place of the pre-Cold War system that has lasted numerous decades and has at its core free market capitalism, which has created a desire for the same set of opportunities, goods and luxuries for people around the world. That set of aspirations is fairly new, as India, China, and other countries have developed products and services consuming middle class in a relatively short amount of time. This provides both opportunities and challenges to U.S. businesses and its workers. >

THE SUCCESS OF BOTH FOREIGN AND DOMESTIC FIRMS HAS THE ABILITY TO CONTRIBUTE TO BOTH FOREIGN AND DOMESTIC ECONOMIES.

Lead Feature / International Trade

› On one hand, there are more consumers globally to whom to sell; and on the other hand, there is more competition from companies abroad who do not have to jump through as many tax and regulatory hurdles as do U.S. companies due to the rapid pace of global development.

Today, thanks to technology, any business can market its goods and services globally on day-one by simply putting up a website that reaches the world. Globalization is changing faster than our ability as a society to understand and process winners/losers and to determine how best to regulate and thrive in this rapidly evolving system. The role of globalization and trade is to develop strategic partnerships between nations that advance mutual prosperity but their role in creating strong security alliances are rarely mentioned while the importance is profound. There has been a tremendous benefit to shareholders of many companies, but in the U.S. when factories have closed due to businesses seeking lower wages, fewer regulations, and overall lower production costs, many American workers have been left out of the growing global economy.

There is clearly a sense that corporations have too much power, we hear disagreement on both sides of issues such as taxation, regulatory, environmental and labor standards. We have seen a host of large successful U.S. companies relocate their corporate headquarters and/or factories to other countries to lessen their tax burden in what is sometimes called corporate inversion, to avoid our 35% corporate tax rate – the highest in the industrialized world. These are not simple issues to fix and too heavy a hand by government would stifle free markets.

In Tom Freidman's book, "The Lexus and the Olive Tree" he explains globalization in simple straight-forward terms that countries who trade together tend to not go to war with each other. We are currently seeing a global nationalist movement that represents a temporary recoiling from globalization.

To regain forward momentum, government leaders must develop policies that create a fairer and more balanced trade environment, which will in turn advance their domestic economies while preserving the benefits of a healthy global capitalistic system.

ACR: It has been often noted that globalization/international trade has been good for the collective, but not good for the individual. True or false?

AFC: False. There are millions of jobs that have been created by the global economic



system and currently available in the U.S. that continue to go unfilled because many workers do not have the proper training to fill them. Individuals have a more diverse set of careers and areas of study available to them than perhaps ever before in human history. As mentioned previously, the variety of imported goods and services available to us here in the U.S. provide Americans with cost savings, an increased variety of products and services at every price-point, as well as increased competition that benefits the U.S. consumer.

Just in the past couple of decades we have experienced the dot.com bubble, the real estate bubble, and many say we are currently in a tech bubble. We have seen real estate values rise at unprecedented levels, the subprime mortgage crisis and the great recession. Today we have the financial markets performing incredibly well. The Dow Jones Industrial Average, made up of 30 North American Blue Chip stocks, has never been valued higher. Our workers (and workers worldwide) still need to be educated, learn to be more entrepreneurial, flexible and adaptable to be able to thrive in the post-Cold War global capitalistic economy. Even as we appear to be heading into a more nationalist trend globally, globalization has been here since the beginning of time and was given a significant adrenaline boost by rapid

advances in automation, ICT, cyber in the past two decades.

ACR: Tell us about your work in international trade in your capacity as the leader of Washington's preeminent global trade organization. Why is Washington a worthy hub for international trade?

AFC: Our role at the Ronald Reagan Building and International Trade Center is to provide an open forum for businesses, NGOs, the U.S. Trade Agencies, think tanks and foreign governments to come together to share ideas around cross border trade and international cultural exchange. Rather than take a position on policy, we work to foster a world class forum in the nation's official World Trade Center and shine a spotlight on experts in their fields to educate, advocate and debate their positions. We host approximately 280 international and cultural trade events per year, as well as host exhibits, concerts, national days, student programs, and incoming trade delegations seeking to meet local partners and understand U.S. policy in the context of foreign and domestic trade. We have a beautiful building, a large outdoor plaza and 27 conference rooms coordinated by an exceptional staff who are able to customize events of all kinds while the reputation of our hospitality, food, and client



Above: Andrew F. Gelfuso with Ellen Johnson Sirleaf, President of Liberia, at the Ronald Reagan Building in Washington, DC.

Left: Daytime view of the Ronald Reagan Building and International Trade Center in Washington, DC.

ACR: What are your thoughts on the future of international trade?

AFG: The global economy will continue to grow amidst a temporary pushback against globalization, as the world’s markets and their prosperity are too intertwined to unwind. The march of globalization has been going on steadily for millennia, and has oftentimes ebbed and flowed throughout history. This current pushback is just one more that the world has experienced since the beginning of humankind.

In the short term, I do expect to see a focus on enforcement of current trade agreements and an effort to make these agreements fairer and more balanced for all sides, as well as a close review and perhaps a modernization of the system of governance within the World Trade Organization (WTO). I also expect that there will be a closer look at how to reform U.S. tax code and how to develop further incentives to encourage both U.S. firms to stay here in the U.S., and to also encourage more foreign firms to set up their operations here.

At the same time, I do not expect the U.S. to turn inward, and in fact, I expect that we will continue encouraging subsidiaries of foreign firms to relocate their operations to the U.S. and hire American workers. These firms increasingly recognize that they need to be closer to their customers and to be seen by the U.S. consumer as good corporate citizens involved in the community and creating American jobs.

Overall, the U.S. has had over the past 70 years and will continue to maintain a comparative advantage in many industry sectors. The U.S. has been the perennial center of global entrepreneurship, flexibility and specialized technology, this will continue to be so, as the U.S. rewrites the rules for the world’s global economic system. ■

service are highly regarded around the world.

It is a fascinating place to be, especially now, because of rapid and ever-changing nature of the geopolitical and the U.S. political environment. Today we have a new administration that ran on a platform of “America first” that appeals to both workers who want better jobs, as well as investors and shareholders who are seeking greater returns on their investments through better enforcement and transparency in fairer trade agreements.

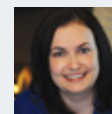
Many companies that operate interdependently within a complex global supply chain are wondering what will replace TPP? How NAFTA might be reformed and what that would mean for them? What might new immigration measures mean for hiring across the country? To address many of these concerns, here at the Ronald Reagan Building and International Trade Center, we bring in domestic and foreign trade officials to speak with businesses, engage with embassies, and speak with leaders from the U.S. business community regarding how to engage in more constructive dialogue and collaboration.

Washington has always been a place where foreign officials and businesses have flocked to connect and develop key contacts in both the policy and political realm. More and more, we have seen citizens, including and

especially millennials who have migrated to the Greater Washington, D.C. area as it increasingly becomes a hub for global trade. We have two pro-business governors in Virginia and in Maryland, as well as a Mayor in Washington D.C. who have been increasingly active in recruiting new businesses to the area, as well as and providing greater assistance to local business seeking to spread their wings internationally.

There are a number of world-class private and public sector resources available to businesses in the Greater Washington, D.C. area that are help propel the region’s growth. Three first class airports, several seaports with hours away, think tanks and NGO’s, an enormous service industry with growing exports, a bio-med industry co-exist and support each other along with the defense industry, has created a broad economic base for the Greater Washington D.C. area which underpins the unique character of America’s most global city. This region has a well-educated and trained workforce that has created a true sense of community for the area with its great schools, culture, hospitals and medical facilities, broad base of tourism and hospitality, along with many museums and professional sports teams. The area is also home to more embassies than any city in the world.

Ana C. Rold is the Founder and CEO of Diplomatic Courier, a Global Affairs Media Network based in Washington, DC and with an audience spanning 180 countries. Ms. Rold has served as Editor-in-Chief of the G7 and G20 Summit magazines since 2009. She teaches Comparative Politics at Northeastern University.



G20 YEA

Authored by: **Carsten Lexa, LL.M.**

The G20 Young Entrepreneurs' Alliance: A Strong International Voice Against Youth Unemployment

What is the result of a combination of low rates of growth, high level of youth unemployment and an increasingly younger population in a country? An increasingly troubling economic outlook! That's what the G20 members have faced for the past several years and in parts still face today. Therefore, the question that has to be answered is this: what policies can G20 governments adopt to address youth joblessness and disengagement and as a result encourage growth in their countries? Many economies that are rapidly developing face the challenge of finding work for large numbers of young people who will soon enter the workforce. Who can provide an answer to the challenge of youth unemployment?

That is the moment of the G20 Young Entrepreneurs' Alliance (G20 YEA). The G20 YEA is a global network of 500.000 young entrepreneurs and the organisations that support them. The idea of the Alliance

was born at the 2009 G8 Summit in Italy and was initiated after an invitation by the former Canadian Prime Minister Stephen Harper at the G20 YEA Summit 2010 in Toronto.

At this Summit, participants determined entrepreneurship as the main force to combat the high levels of youth unemployment and as a result contributed to a communiqué that identified 5 key barriers that discourage young people from starting their own business and therefore enable them to escape the trap of youth joblessness: excessive regulation and taxation, even in a very early stage of a business; inadequate or inefficient coordination of many of the forms of support that are available; social attitudes that discourage risk-taking or stigmatize failure; the need for specific entrepreneurial education in schools and universities and access to funding to support start-ups and early-stage business growth.

Over the years, these five barriers became the pillars of the work of the G20 YEA and are prominently featured in the themes of every



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Digital Trends For Future Business

annual G20 Young Entrepreneurs' Summit, always held in the same country as the G20 Summit. These unique events bring together hundreds of young entrepreneurs from the G20 countries, carefully selected by each member organisation.

To move the causes of youth entrepreneurship and the fight against youth joblessness forward, the G20 YEA became on one hand engaged with the G20 and their leaders and governments in a very early stage. Following the invitation in 2010 by the Canadian Prime Minister, in 2012 Mexican President Felipe Calderon met with more than 200 young entrepreneurs in his residence in Los Pintos and in 2017 at the G20 YEA Summit in Germany the guests at the Summit will include the Federal Minister for Economic Affairs and Energy, Brigitte Zypries, and the State Secretary Dorothee Bär who is responsible for the topic of "digitalisation" at the Federal Ministry of Transport and Digital Infrastructure.

On the other hand, the relationship with the B20 (Business 20) was especially fruitful. The G20 YEA's 2013 Moscow Summit was the first substantial engagement of the G20 YEA in the B20 and resulted in the inclusion of language on youth entrepreneurship in the subsequent G20's Saint Petersburg communiqué. The G20 YEA's 2014 Sidney Summit created a global action plan for young entrepreneurs and the G20 YEA's 2015 Istanbul Summit yielded a commitment

in the G20 communiqué at Antalya that year to "support the better integration of our young people into the labour market including through the promotion of entrepreneurship". Finally in 2016 members of the G20 YEA began to work in the B20 Task Forces, encouraged by the Chair of B20 China, which resulted in 2017 in an open invitation by the Chair of the B20 Germany for the entrepreneurs of the G20 YEA to become even more involved in the B20 Task Forces. In addition, the G20 Young Entrepreneurs' Alliance was appointed a "networking partner" to the B20.

The story of the G20 YEA continues in 2017, at the G20 YEA Summit in Berlin from 15th to 17th of June, hosted by JCI Germany (Wirtschaftsjunioren Deutschland, www.wjd.de) and their G20 YEA President Germany Carsten Lexa. More than 500 young entrepreneurs from the G20 countries will gather to share with the G20 leaders their ideas on the future of business, on how digitalisation will change the way to do business worldwide and on what can be done, from the perspective of young entrepreneurs, to create growth and employment opportunities, especially in the context of a more and more connected world. Information on the G20 YEA Summit 2017 can be found here: www.g20yea2017.com.

The fight against youth unemployment will not end for the G20 Young Entrepreneurs'

Alliance any time soon, especially in times where the idea of open borders to create worldwide wealth, growth and jobs and the advantages of this idea are questioned. Fortunately, young entrepreneurs have an unending willingness to do, be and learn more, they don't accept the status quo and they want to change things that they think needs to be changed. And: they are not only crazy enough to think they can change the world – they do! ■

Carsten Lexa, LL.M. is the President of G20 YEA Germany and the host of the German 2017 Berlin Summit. A corporate lawyer by profession and equipped with his own law firm, he advises international clients, who want to do business in Germany, in corporate and commercial legal matters. He is, by invitation of the European Commission, a participant in the annual SME Assembly. He is also a member of the B20 Task Forces and since 2014 a member of the national board of JCI Germany (WJD - Wirtschaftsjunioren Deutschland), Germany's biggest organization for young leaders and entrepreneurs. Carsten can be reached via e-mail (g20yea@kanzlei.lexa.de), Facebook (facebook.com/kanzlei.lexa), Twitter (twitter.com/kanzlei_lexa) and LinkedIn (linkedin.com/carstenlexa).



Diverse, Resilient and Viable: Stabilising Economies and Societies Through Women's Empowerment

The international forum G20 has an ambitious goal: it aims to improve prosperity for people around the world through sustainable economic growth. Influential economic organizations such as the OECD or the World Bank long since recognized that this goal cannot be achieved without strengthening the economic position of women.



What is the current economic position of women? Throughout the world, including in G20 member states, women are not able to participate equally in society and the economy. On average, women receive lower pay, are less likely to be promoted, and are much more likely to engage in unpaid labour such as housework, raising children, and caring for infirm relatives. Various studies have also shown that it is much more difficult for women to get loans or attract investment.

Women20 In Its Third Year

Women20 is one of the most recent G20 dialogue processes: the objective of reducing the gender employment gap by 25 percent by 2025 (“25 by 25”), which was agreed on by the G20 at its 2014 summit in Australia, paved the way for the inclusion of a new engagement group in the official ambit. In October 2015, the first working meeting of Women 20 (W20) took place in Istanbul as part of the Turkish G20 presidency. Demands and measures were formulated, which were intended to promote the economic participation of women in the G20 Member States and to strengthen their economic power. In 2016, these strands of work were taken up and continued by the Chinese presidency of the G20, and a final declaration (W20 communiqué) was also drawn up at the W20 summit and passed to the G20.

Now in its third year, the expectations of W20 have increased considerably: Germany as a country which has a strong civil society and a female head of government should not only provide a stage for gender equality issues in the G20, but also finally create an active, sustainable W20 network.

Clear Focus

This network will support the G20 in the long term through specific recommendations for action, consolidated advocacy and expertise. These joint recommendations are drawn up

by representatives of women’s and social organizations, women entrepreneurs and female economic experts from the G20 countries and international organizations from around the world. The aim is to permanently mainstream the subject of women’s economic participation and empowerment (women’s economic empowerment) in the G20 objectives. An additional objective is to evoke existing political declarations such as the UN’s Agenda 2030 time and time again and call for the implementation thereof.

The W20 topics include the labour force participation of women, equal pay, women in managerial positions, the compatibility of family and career, the evaluation of gainful employment and care work, female entrepreneurship, access to the capital market and closing the digital gender divide.

A Clear Focus

The Women20 team knows that W20 will only be able to gain the ear of the G20 member states if its demands are clear and concise. Women20 will therefore concentrate on the following four pillars:

- **Labour Market Inclusion:** Increasing the labour market participation rate and the value of work traditionally done by women
- **Financial Inclusion:** Promoting female entrepreneurship and access to finance for women
- **Digital Inclusion:** Closing the digital gender divide
- **Strengthening the W20:** Gender Equality and Women’s Economic Empowerment at the core of G20

Mainstreaming the G20

For these reasons, Germany has declared women’s economic empowerment as a specific goal during its G20 presidency, part of its focus on “enhancing viability”. Of course, this topic overlaps with other topics for this year’s G20 summit – after all, 51 % >

●● **WOMEN20 IS ONE OF THE MOST RECENT G20 DIALOGUE PROCESSES: THE OBJECTIVE OF REDUCING THE GENDER EMPLOYMENT GAP BY 25 PERCENT BY 2025 (“25 BY 25”), WHICH WAS AGREED ON BY THE G20 AT ITS 2014 SUMMIT IN AUSTRALIA, PAVED THE WAY FOR THE INCLUSION OF A NEW ENGAGEMENT GROUP IN THE OFFICIAL AMBIT.** ●●



> of all humanity is female, and global developments impact on women just as much as they do on men. Empowering women is therefore a cross-cutting issue, and the G20 urgently needs to acquire a gender perspective in all of its analyses, working groups and processes.

To date the G20 member states have taken no concrete steps towards creating the conditions necessary for “25 by 25”. The Women20 delegates therefore have clear expectations of the German G20 presidency: under Germany’s leadership, the heads of state and government must commit to drawing up and publishing national plans of action to include measures and objectives in the following areas:

- **Full legal equality:** for example, women should be able to purchase land or open a bank account without having to obtain permission from their husbands or other family members
- **Unrestricted access to financial and other resources, on equal terms:** it is unacceptable that female entrepreneurs receive comparatively less money for their investments than men in circumstances where the risks are the same or lower

- **Equal access to the market for businesses run by women:** to global supply chains, for example
- **Recognition and redistribution of unpaid housework and care work:** even women with jobs perform up to ten times more of the housework and family care than working men, and this work is not recognized in any way in national accounts or other economic statistics
- **Equal pay for equal or equivalent work:** nowhere in the world do women have the same job security, the same pay or the same promotion prospects as men
- **Equal access to decent working conditions:** women around the world are much more likely to work in low-paid jobs, to get caught in the part-time work trap, and to receive little or no provision for old age; all too often, poverty is a women’s issue
- **An appropriate proportion of women in leading positions:** only those who sit at the helm can make decisions and play an active role in shaping the future

W20 Germany

Within the framework of the 2017 German presidency of the G20, the National Council of German Women’s Organizations [Deutscher

Frauenrat] and the Association of German Women Entrepreneurs [Verband deutscher Unternehmerinnen] (VdU) were tasked by the Federal Government with organizing the Women 20 dialogue process. In order to include the experiences of women’s associations and organizations as well as women entrepreneurs from their native Germany in the process, various “roundtables” will take place in the spring of 2017 and the demands (contents) of the W20 communiqué will be reviewed. A parallel task will involve establishing a network of representatives from women’s associations and organizations and women entrepreneurs from the G20 states.

The aim of the network is to jointly formulate demands for the heads of State and Government, which will be presented to the G20 president Angela Merkel at the W20 Summit in Berlin on 25 and 26 April. The summit in Berlin will conclude the 2017 W20 dialogue process. Responsibility for the process will then pass to the representatives from Argentina, who will assume the presidency of the G20 in 2018. As the umbrella organization of more than 50 nationwide women’s associations and organizations, the National Council of German Women’s Organizations is the biggest women’s lobby in Germany. The Association of German Women Entrepreneurs is a cross-industry trade association which has been representing the interests of entrepreneurially active women in commerce, society and politics for more than sixty years.

Ensuring Women20 Continues to Pack a Punch

All experience to date shows that the economic empowerment of women is not something that can be achieved quickly and easily; it is something that has to be continually worked at. Women20 has only existed as an independent civil society dialogue process within the G20 for the past three years. This year, Women20 Germany was able to draw on the important preliminary work carried out in Turkey in 2015 and in China in 2016. As the W20 Germany is closely cooperating with partner institutions in Argentina, which is to chair the G20 next year. Implementing all of our goals will take longer than the period of the German G20 presidency, but Women20 Germany aims to do all that it can to trigger an ongoing process that will endure over the coming years. ■



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Support the [Global LPG Partnership](#) in our work to help developing countries make the switch to clean cooking with [LPG](#).

So the world can breathe more easily

Gender Gap

Authored by: **Julia Pomares, Gala Díaz Langou and Belén Abdala**

The Potential of Reducing the Labour Market Gender Gap: Lessons from Latin America

Gender equality and women's economic empowerment are crucial factors for the sustainable development of societies.

Globally, women are often subject to wide ranging employment discrimination and workplace inequality, leading to a lower economic status that is reflected in several indicators, such as the number of women living in poverty, the rates of unemployment, underemployment and the high proportion of unpaid work.

Women's participation in the labour market has remained steady in the two decades from 1990 to 2010, drifting around 52%. In addition to the slow improvements in the incorporation of women into the labour market, the gap in the participation rates of women and men remains substantial. In 2010, women's labour force participation rates were below 30% in Northern Africa and Western Asia, below 40% in Southern Asia, and below 50% in the Caribbean and Central America. This situation aggravates when gender identity is compounded by other types of inequalities such as economic and social power and discrimination on the grounds of race, class or income.

Gender equality and women's economic empowerment are also crucial factors for the sustainable development of societies.

Women's labour participation in Argentina and Latin America: causes and effects

Women face greater obstacles than their male counterparts to enter the labour market. Women show a lower activity rate than men in all countries in Latin America. In Argentina, the female activity rate has been stagnant for 15 years, showing a wide gap

with the male: in 2014, the male activity rate was 54% higher than the female rate (71.8 vs. 46.5 MTEySS, 2014). Women also tend to be employed in less stable or temporary jobs within the so-called 'economy of the shadows'. Women are segregated horizontally in low-productivity sectors and vertically in lower-ranking positions: they are mainly found in low-productivity sectors as salaried employees (37.6%), self-employed workers (20.2%) and domestic service providers (10.7%). This situation is consistent within the global framework. In 2011, it was estimated that more than 80% of working women in sub-Saharan Africa, Oceania and Southern Asia held vulnerable jobs.

Furthermore, women must accredit higher levels of training to be inserted in a job. 30% of working women have higher education, compared to 15% of men. Women last longer in the education system, but even though they have greater educational credentials, the pay gap remains as the average salary of men is 31% higher than that of women. Wage gaps are accompanied by the lower representation of women in positions of leadership and seniority in the private sector: women face greater constraints to attain decision-making positions. In Argentina only 4% of large companies and SMEs are run by women. This is not an exclusively local phenomenon; in the list of CEOs of the 500 largest companies in the world, only twenty women appear. Women hold only 22% of senior leadership positions, while 32% of businesses have no female senior managers.

Set situation can be explained mainly by

the persistence of gender stereotypes and by the distribution of work within households, that is, the greater female participation in the activities of care. For example, in the urban agglomerations of Argentina, women with children are involved in the labour market an average 20% less than the ones without children in charge. This is not the case for men who are fathers, for whom there is no evidence of a lower participation rate in the labour market compared to men who do not have children.

Unpaid care is also one of the largest and most important gender inequalities relevant to macroeconomic policy formulation. This type of work supports the productive organization and reproduction of societies. In different socioeconomic contexts, care work encompasses from the care of children, the elderly and sick people in the home and community, to domestic work, fetching water and collecting firewood. Given that Argentina's society is mainly urban (95%), care work tends to be essentially domestic. Societies depend on it.

Historically, in most societies families were organized with the male breadwinner model, where men earned the family wage and provided, while women were responsible for domestic labour. With the progressive insertion of women in the labour market, the distribution of work within households did not shift proportionally. According to the latest survey of unpaid work in Argentina (INDEC, 2013), women invest 6,4 hours a day on household chores and care, which almost duplicates the time invested by men (3,4h).

Countries that have bridged this gender gap have done so by socializing unpaid care work, with three major policy instruments: provision of care services, expansion and de-maternalization of family leaves schemes, and public transfers for families with care needs. These policies help tackle at least three major issues: early childhood care and development, women's labour participation (by relieving them of their care responsibilities); and youth labour participation (given that most of those who do not work or study are young mothers who could find employment opportunities in the care system) (World Bank, 2016). Effective public care facilities would allow young mothers to continue their studies and prevent them from withdrawing from the workforce. This, in turn, would facilitate the process of human capital accumulation, strengthening productivity rates and therefore improving economic



●● *IN DIFFERENT SOCIOECONOMIC CONTEXTS, CARE WORK ENCOMPASSES FROM THE CARE OF CHILDREN, THE ELDERLY AND SICK PEOPLE IN THE HOME AND COMMUNITY, TO DOMESTIC WORK, FETCHING WATER AND COLLECTING FIREWOOD. GIVEN THAT ARGENTINA'S SOCIETY IS MAINLY URBAN (95%), CARE WORK TENDS TO BE ESSENTIALLY DOMESTIC. SOCIETIES DEPEND ON IT.* ●●

performance of the countries in question.

Among all countries that are attempting to measure the value of unpaid care work, the monetary value of unpaid care work is estimated to range from 10% to over 50% of the GDP ; an additional 20% to 60% should be added if the hidden contribution of unpaid work was recognized and valued. UN estimates show that if women's paid employment rate was equal to that of men, United States' GDP would increase by 9%, Eurozone's by 13%, and Japan's by 16%. In the 15 largest developing economies, the per capita income would increase by 14% by 2020 and by 20% by 2030. The unequal distribution of unpaid domestic care hinders a greater and better labour market

participation of women. This, in turn, thwarts the overall development of countries.

Closing the gender employment gap: G20's goal and the role of think tanks

With this background, the G20 set the objective of reducing the gender employment gap by 25% by 2025 ("25 by 25"), paving the way for the inclusion of an imperative sector. Gender equality is not only a fundamental development goal in itself, but is also economically profitable on strategic terms. Removing the barriers for female employment is central for the promotion of an open, dynamic and inclusive labour market, a centrepiece of B20's focus.

The role of think tanks, such as the Center for the Implementation of Public Policies Promoting Equity and Growth (CIIPEC), is critical to bring evidence and to inform gender related priorities in the G20 agenda. When facing large and complex problems we need the compass of technical knowledge. Think tanks provide research-based advocacy and evidence-based analysis that help inform decision making.

In such a context, the Women20 (W20) is a vital network that supports the G20 through specific recommendations for action, consolidated advocacy and expertise. Its topics include labour force participation of women, equal pay, women in managerial positions, the compatibility of family and career, the evaluation of gainful employment and care work, female entrepreneurship, access to the capital market and closing the digital gender divide.

These were some of the issues discussed last March in Buenos Aires, during the first W20 meeting in Argentina. The challenge now is to turn such agreements and consensus into domestic policy. 2018 will be Argentina's turn to preside the G20 and, within this framework, the W20. In a context where the expectations of W20 have increased considerably, Argentina will have to lead discussions to move forth women's economic participation and empowerment to fulfil G20 objectives. The 2018 insight will seek to give a voice to a vibrant civil society whose mobilization led to the conformation of movements such as the 'Ni Una Menos'. It will address the challenges member states face to ensure women's rights and gender equity.

Beyond economic contribution, women's paid and unpaid work has a social value with considerable human development implications. The improvement of women's insertion in the labour market is a pending challenge. It depends on a broad policy approach that place female employment as a priority, accompanying an investment in care, with active employment policies, and both communication and education programs with a gender perspective. International cooperation and mutual learning based on the different experiences are central points of the discussion. It demands the development of a comprehensive perspective on women's possibilities and the breakdown of stereotypes about their role in society. ■

Why Brands Matter

Brands do not exist. One could make this argument, claiming that you can't harvest a brand in the ground, build it from raw materials in a factory, or mass produce it and store in a warehouse. You can't forget to pack it before leaving on holiday or accidentally leave it lying around for the dog to chew.

Yes, one may not be able to touch a brand, but they are arguably the most valuable intangible asset on your company's balance sheet. Strong brands enable consumers to distinguish your products from that of your competitors. Brands cultivate affinity, trust and customer loyalty. Brands allow your company to charge a premium for its products. And brands play a key role in making products stand out in an increasingly competitive global marketplace.

Strong brands are not created overnight. They are the result of the brand owner's consistent commitment to quality, a willingness to listen to, and serve, its customers, and they are built on a foundation of trust. A recent report by Edelman revealed

a deep crisis in trust generally, particularly in government and the media. Six in 10 survey respondents said they trust the results of search engines over web-content developed by humans. Among those who are uncertain who—or what—to believe, business is the most trusted institution. Indeed, the report described business as “the last retaining wall.” Brands lie at the heart of this trust.

From the outset, a brand needs to be maintained and protected. By registering, managing, and carefully licensing your trademarks, you protect your brands from being used or abused by competitors or counterfeiters. This is a vital part of any brand strategy.

Protecting brands with trademarks is also good for the bottom line. A study of European brands found that industries with high trademark use have on average 29% higher revenue per employee than those that do not. They also pay their employees 19% higher wages. A similar study look at the United States found that workers at companies in trademark-intensive industries

earned \$1,236 per week, compared to the \$896 earned by workers in other industries.

The boost that trademarks can provide a company and economy is not just restricted to developed economies. Trademarks in Latin America, a study of the economic impact of trademarks in Chile, Colombia, Mexico, Panama, and Peru, found that the economic activities where trademarks are registered and used intensively contribute 15% of GDP on average and generate 18.5 million jobs. Depending on the country, these 18.5 million workers earn between 4.6% and 25% more than workers involved in other economic activities. In short, a strong trademark system is good for business and its employees.

Despite this evidence, many businesses fail to register their trademarks. To some, brands are just a line on a balance sheet and trademarks an additional legal cost. It is in a company's best interest to change this. And this change needs to come from the top! CEOs and those around boardroom table should take a more hands-on approach to their company's brands, actively take steps to understand their brands' value, and act on this information.

Most companies have a high-level brand strategy, often led by its marketing department, but few of these place trademarks where they should be: at the centre. Without trademarks, a brand is at risk. Putting trademarks at the centre of the brand strategy will help protect market share and drive future growth. ■



Why Strong Brands are at the Centre of a Successful Economy

At the heart of any successful business you will find a strong brand. A brand embodies the connection between a product and the consumer. It is about trust – consumers are loyal to the brands they love and are prepared to pay a premium for them. An economy that contains businesses with strong brands is one that is resilient enough to withstand downturns, keep growing consistently and create jobs. To thrive, brand

owners need to operate in an economy where governments understand the value of trademarks.

While it can be difficult to measure the exact value of a brand, it is possible to do so for trademarks and the results are impressive. Interband – a leading brand consultancy – values Apple at \$178 billion, Toyota at \$53 billion and Samsung at 50 billion in its annual list of the top 100 brands. On a wider level, a Study by the US Patent and Trademark Office

shows that Trademark-intensive industries contributed 23.7 million jobs to the US economy in 2014. In some parts the study expanded its scope to look at all IP (including patents, trademarks and copyright). Workers in IP-intensive industries earned an average weekly wage of \$1,312, 46 percent higher than the \$896 average weekly wages in non-IP-intensive industries in the private sector. IP-intensive industries accounted for \$6.6 trillion in value added in 2014. >

› A similar study from Europe showed equally impressive results. IP-intensive industries generated more than 42% of total economic activity in the EU, where 36% alone (worth Euro 4.8 trillion) was produced by trademark-intensive industries. IP-intensive industries also generated 27.8% of all jobs in the EU during the period 2011-2013, with 21% in trade mark-intensive industries. The wage premium for IP intensive industries was 46% over other industries. Both these studies have been regularly conducted and have showed not just that trademarks are vital to a successful economy, but that their importance is growing with each year.

The effect of trademarks is not just restricted to the developing economies. INTA has done a survey of five Latin American countries that showed that a salary premium in trademark intensive industries varying between 4.6% and 25% and that industries that register and use trademarks intensively there were responsible for 18.5 million jobs and make up 15% of GDP, 15% of exports and 26% of imports.

Trademarks are the point where brands meet governments. By registering their

brand as a trademark, businesses are showing that they – and their consumers – value it and are giving themselves a way to protect their brand from others who want to take advantage of the goodwill they have built up, either by counterfeiting goods, or producing their own products using a confusingly similar brand. While brands are built by businesses, brand owners need governments’ help to protect their rights.

Where trademarks are weak and counterfeiting can thrive, the economy struggles. A new report from Frontier Economics, an internationally recognized economics research firm, indicates that the global economic value of counterfeiting and piracy could reach US \$2.3 trillion by 2022. It concludes that related costs could reach an estimated US \$1.9 trillion by 2022. Taken together, the negative impacts of counterfeiting and piracy are projected to drain US \$4.2 trillion from the global economy and put 5.4 million worth of legitimate jobs at risk by 2022.

At the International Trademark Association we believe protecting brands though having a strong trademark system should be at the

●● *WHILE IT CAN BE DIFFICULT TO MEASURE THE EXACT VALUE OF A BRAND, IT IS POSSIBLE TO DO SO FOR TRADEMARKS AND THE RESULTS ARE IMPRESSIVE.* ●●

heart of any government-level economic strategy. Governments need to make sure the right resources are dedicated to developing IP systems that can register trademarks quickly and accurately and to provide strong enforcement mechanisms. They also need to promote the value of brands and trademarks to businesses, particularly SMEs, who often create good brands, but do not do enough to protect them. By focusing on these three issues – resources, enforcement and promotion – governments can ensure that more powerful brands can drive higher economic growth. ■

THE ECONOMIC IMPACT OF INTELLECTUAL PROPERTY IN LATIN AMERICA

Chile, Colombia, Mexico, Panama, and Peru participated in this study.



Salaries

Salary in trademark intensive industries are between 4.6% and 25% higher than salaries in non-intensive industries



Employment

Industries that intensively use trademarks generate 18.5 million jobs and US \$2,390 in revenue per person per year.



International Trade

For every US \$100 of exports, US \$15 corresponds to trademark-intensive products.
For every US \$100 of imports, US \$26 corresponds to trademark-intensive products.

The International Trademark Association (INTA) is a global organization of over 7,000 trademark owners and professionals from over 190 countries. INTA is a not-for-profit membership association dedicated to supporting trademarks and related intellectual property in order to protect consumers and promote fair and effective commerce. INTA was founded in 1878 and is a leader in global trademark research, policy development, education and training. To learn more about INTA and its work around impact studies, visit www.inta.org/impactstudies. Look out for INTA's next study on the economic impact of trademark intensive studies in Singapore, Malaysia, Thailand, Philippines and Indonesia in August 2017!



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Welcome:

Akhmetzhan Yessimov

Chairman of the Board at NC Astana EXPO-2017



The development of green technologies is a key objective of the international society which is facing global climate change, striving for stable development and an energy efficient lifestyle.

This summer, between June 10 and September 10, the International Specialized Exhibition EXPO 2017 “Future Energy” will take place in Astana, the capital of Kazakhstan, with 115 countries and 20 international organizations due to take part. As the organizers of this key event in the sphere of renewable energy, we are glad that during the G20 summit the climatic and energy challenges of the modern world will be discussed.

EXPO 2017 is an excellent platform for demonstrating all the achievements of the countries in the field of renewable energy and also a powerful impetus for the

further growth of green energy.

It should be mentioned that alongside preparations for EXPO 2017, Kazakhstan (a party to the Paris Agreement) has been actively pursuing the policy focused on the development of renewable energy. It is planned to increase the share of renewable energy sources in the national energy mix to 10% by 2030. By 2050, half of all electric energy generated in Kazakhstan will be green. By late 2020, over 100 renewable energy facilities will be commissioned in Kazakhstan.

We would like to take the opportunity to invite everyone to visit Astana this summer, to exchange experience and explore new green technologies, as well as to see Kazakhstan as a unique tourist destination. ■



The Event:

Global Energy Future to be discussed at Astana EXPO 2017

The International Specialized Exhibition Astana EXPO 2017 “Future Energy” will showcase recent developments in the sphere of renewable energy.

Astana will present itself as a city where the world will learn about the most advanced green technologies and achievements. Representatives of 115 countries and 20 international organizations will participate in EXPO 2017, with each a pavilion of its own.

World-famous scientists and experts, politicians and members of the business community will discuss global issues related to developing renewable energy sources at various forums and themed conferences during the Astana EXPO 2017. They will draft global policy documents for promoting an energy efficient lifestyle and actively introducing renewables.

As part of EXPO 2017, the following events are due to take place: the Ministerial Conference “Meeting the challenge of sustainable energy”, the 14th Eurasian Media Forum, the 11th

KAZENERGY Eurasian Forum, as well as many others.

The architecture and design of EXPO 2017 are based on the principles of energy efficiency. The key facilities of the exhibition are partially powered by solar, wind and geothermal energy. The Smart Grid system, which will be used at the exhibition for the first time in Kazakhstan, allows reducing energy losses during transportation by up to 50%. In addition, locally manufactured photovoltaic panels are installed on the roof of the Sphere, and the upper part of the building is equipped with two noiseless wind turbines.

EXPO 2017 covers an area of 174 ha, with the exhibition area spanning 25 ha. The centrepiece of the exhibition is a building called the Sphere, which total area is 24,000 square meters. On the eight floors of the

world’s largest spherical structure, which has already become a tourist attraction in Astana, the use of space, solar, biomass, wind, water and kinetic energy will be showcased in an interactive and informative way.

The guests of EXPO 2017 are to include heads of state, executives of the largest global and Kazakhstani companies, including the exhibition sponsors such as Shell, Samsung, NCOC, JCS Samruk-Energy, as well as representatives of international organizations such as the UN, UNESCO, UNICEF, UNIDO, IRENA, the World Bank, OPEC, etc.

In addition, the visitors of EXPO 2017 will be treated to a large-scale entertainment program, concerts of world-famous pop stars, art exhibitions and various shows that will certainly be a memorable experience for even the most discerning spectators.

Overall, over 5 million visits are expected. The hosts have prepared special tourist routes for the guests and residents of Kazakhstan. Apart from a visit to EXPO 2017, they include trips to the country’s tourist attractions. Thus, the following sites will be available for visiting: twelve natural parks in various regions of the country with unique places such as the Sharyn Canyon, the Kolsay Lakes, the Borovoye, Bayanaul and Karkaraly national parks; UNESCO World Heritage Sites (the Mausoleum of Khawaja Ahmed Yasawi, the Petroglyphs of Tamgaly and historical sites along the Silk Road); and special destinations, such as the Baikonur Cosmodrome, which is the largest spaceport in the world.

Thus, EXPO 2017 is to become one of the most meaningful events to take place in 2017. ■



●● THE ARCHITECTURE AND DESIGN OF EXPO 2017 ARE BASED ON THE PRINCIPLES OF ENERGY EFFICIENCY. ●●

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Authored by: **Neil Hare**

In the Post World War II International Order: It is Time for Change in Taiwan

There is currently underway a reorganization of the international order and agreements put in place in the years after WWII. Arguably, this movement began with the Brexit victory last July, and has been punctuated with the election of Donald J. Trump last November.

President Trump has made it clear that he will evaluate and change many of the international agreements and organizations that have presided over the last 70 plus years, including defense pacts, trade agreements, and nuclear non-proliferation treaties. He's told NATO countries they must pay their fair share of defense costs, Israel that he is open to a "One State" solution, and Russia that he is amenable to working with them in Syria towards defeating ISIS.

There is another and very important region of the world where change is needed and that is Taiwan. One of President Trump's first phone calls after his victory was with the leader of the current government of Taiwan, Republic of China (ROC) Tsai, Ing-wen – something no U.S. President has done in over 40 years. For many, this signaled the end of the "One China" Policy. In a subsequent phone call with Chinese (PRC) President Xi

Jinping, President Trump reaffirmed the "One China" Policy, putting U.S. policy somewhere in the 'active' middle.

The Taiwan Civil Government (TCG), an educational and advocacy group in Taiwan, argues that the time for change is now. Founded in 2008 by businessman Dr. Roger Lin, the TCG boasts a membership base well over 70,000 members, with rapidly growing new membership rates. The TCG is working aggressively to educate people in Taiwan and Washington, D.C. about the history of Taiwan and the immediate need for a future of self-determination and diplomatic recognition.

The Taiwanese people have remained in diplomatic limbo since the end of World War II. In the treaty of San Francisco of 1952, Japan accepted defeat and turned over Taiwan and other islands in the region to the U.S. as the "principal occupying power." Rather than take over full control >

●● THE TAIWAN CIVIL GOVERNMENT (TCG), AN EDUCATIONAL AND ADVOCACY GROUP IN TAIWAN, ARGUES THAT THE TIME FOR CHANGE IS NOW. FOUNDED IN 2008 BY BUSINESSMAN DR. ROGER LIN, THE TCG BOASTS A MEMBERSHIP BASE WELL OVER 70,000 MEMBERS, WITH RAPIDLY GROWING NEW MEMBERSHIP RATES. ●●







Above: Mrs. Julian Lin and Nigel Farage in Washington, DC during the inauguration of President Donald J. Trump.

Left: Dr. Roger Lin and Mrs. Julian Lin.

●● TAIWAN HAS TWO POLITICAL PARTIES AND REGULAR ELECTIONS BUT THE TCG DOES NOT RECOGNIZE THESE PARTIES OR THE ROC GOVERNMENT AS LEGITIMATE. THE ROC IS A CHINESE GOVERNMENT IN EXILE AND DOES NOT REPRESENT TAIWAN, AND TAIWAN IS NOT THE ROC IN EXILE. ●●

of Taiwan, the U.S. installed Chiang Kai-Shek as the Administrator of Taiwan, who ran the island nation for the next 25 years under U.S. protection.

U.S. policy towards Taiwan shifted under President Richard Nixon with the opening of China in 1972. It was during that time that, President Nixon accepted the “One China” policy, essentially agreeing to not officially recognize Taiwan as an independent sovereign nation.

In 1979, the Taiwan Relations Act removed the assurance of US military support in case of attack, but did provide for robust arms sales. This new relationship, upholding the “One China” Policy while still supporting and maintaining relations with Taiwan, became known as the policy of “strategic ambiguity.”

Taiwan has two political parties and regular elections but the TCG does not recognize

these parties or the ROC government as legitimate. The ROC is a Chinese government in exile and does not represent Taiwan, and Taiwan is not the ROC in exile. Neither the United Nations, nor most countries recognize Taiwan’s sovereignty. A Taiwanese passport is not widely accepted, and when Taiwan participates in the Olympics, they must do so under the banner of Chinese Taipei rather than their own nation’s flag.

The TCG asserts it is time for the U.S. to remove the policy of strategic ambiguity and take a more active role in letting the people of Taiwan determine their future. TCG argues that under international law everyone has the right to a nationality, can’t be arbitrarily deprived of their nationality nor denied the right to change it.

The post WWII world order is shifting,

but the import of freedom, independence and human rights that was won at great cost must be upheld. In this case, that means self-determination for the people of Taiwan. The time for change is now. ■

Editor’s Note: This material is distributed by Global Vision Communications on behalf of the Taiwan Civil Government. Additional information is available at the Department of Justice, Washington, DC.

Neil Hare is President and CEO of Global Visions Communication, a Washington, DC-based PR and Marketing Agency. He is a writer, creative think tank and an expert on communications and business strategy.

ON THE WORLD STAGE IT IS TIME TO ACT FOR TAIWAN



TAIWAN IS A LEADER IN THE GLOBAL ECONOMY

Taiwan has a \$1.1 trillion GDP and is on the cutting edge of several sectors from hi-tech and IT to refining and chemicals. Despite being the 11th largest economy in the world, Taiwan is not recognized diplomatically by the G20 countries or the United Nations. Under the Universal Declaration of Human Rights, the people of Taiwan's human rights continue to be violated and it is time for the global community of nations and the United Nations to support self determination for Taiwan.



Taiwan Civil
Government

Learn More At TaiwanCivilGovernment.com

Materials distributed by Global Vision Communications on behalf of the Taiwan Civil Government.
Additional information is available at the Department of Justice, Washington, DC.

Mobile Technology

Authored by: **Anne Harris**

Silicon Valley's Cousin: Mobile Technology Development in Turkey

Turkey is being hailed as the new Silicon Valley, due to a massive surge of mobile tech development in the area.

Turkey is being hailed as the new Silicon Valley, due to a massive surge of mobile tech development in the area. An astoundingly young and well-educated population has cultivated an environment ripe with startups and entrepreneurial think tanks. Turkey's young population finds itself adopting only the latest and greatest devices, allowing for endless opportunity to develop new applications for emerging platforms. In fact, some of the fastest growing companies in Turkey are based in mobile technology.



A Unique Environment for Tech Development

Turkey's incredibly young population helps create an environment of innovation for new and emerging tech. Half the population of Turkey is under thirty, and a whopping eighty-four percent of Turkish citizens own a mobile device. The use of mobile applications, such as Hepsiburada, for shopping, banking, and conducting business continues to skyrocket, as desktop use becomes a thing of the past. The incentive for prioritizing mobile application development is a result of the desire to streamline user compatibility in an emerging mobile market.

Think Tanks and Incubators

Another contributing factor to the prominence of mobile tech is the numerous think tanks spread throughout the country. Because Turkey is located at the crossroads of Africa, Asia, and Europe, its location is prime for incubating technology in the global market. Turkey is home to Teknopark Istanbul, one of the largest technological think-tanks in the world. In addition to spurring development of advanced electronics and mobile tech, Teknopark Istanbul also assists in the advancement of clean energy and aeronautics. Another prominent incubation center, Endeavor, is working to expand jobs in the tech field and help develop entrepreneurial solutions. It is within these thought incubators that some of Turkey's most successful startups are born.

E-commerce

Companies conducting business on mobile devices have seen massive growth over the past year. One of Turkey's fastest growing companies, 4play, specializes in mobile solutions for businesses hoping to develop a presence on mobile platforms. As the fifth fastest-growing Turkish company in 2015, 4play has capitalized on the prominence of mobile expansion. Companies are turning toward mobile application as a means of adapting business to suit a tech-savvy population. Application-based businesses such as BiTaksi, a cab-calling service, and Yemeksepeti, a food delivery service, have seen massive growth since their formation. Additionally, online retail apps are well received, and companies conducting business over mobile devices are flourishing. It has become almost necessary for businesses to develop a mobile presence, as Turkey's uniquely high mobile use sees extraordinary growth in these markets.

Expansion Opportunities

Turkey has already cemented its status as a prominent global leader in developing mobile tech. With the legacy of Constantinople, Turkey's location provides endless opportunities for the expansion of emerging Turkish businesses. Many investors have already taken great interest in Turkey's thriving global tech market, as early financiers sensed a goldmine of formidable startups and emerging technologies, waiting to be unearthed

by the rest of the world. For Turkey, this would mean the solidification of trade expansion and economic upturn, as the influence of their mobile tech spreads to all corners of the globe. ■

Anne Harris is a Contributor to Diplomatic Courier Magazine in Washington, DC.



Global Education

Authored by: **Manu Kapur**

Beware Unproductive Success, Try Productive Failure

How do we prepare children for the future of work in a world of volatility, uncertainty, complexity and ambiguity?



Education systems around the world are battling a challenging problem: How do we prepare children for the future of work in a world of volatility, uncertainty, complexity and ambiguity (VUCA)? A future that will require students to have not only basic knowledge in their specialist domains, but also critical 21st century skills and competencies such as: critical thinking, creativity, teamwork, and resilience.

What makes this problem even more challenging is that current models of education and training remain rooted in the industrial-era mode of teaching: transmission of knowledge from teacher to student, followed by drill and practice. These models struggle to

develop even basic literacies in math, sciences and languages, let alone to advance critical skills and competencies.

Even in countries that seem to do an excellent job of developing the basic knowledge and skills, as evidenced by their high rankings on international benchmark tests such as PISA, there is a growing recognition that we need to innovate and change the design of teaching and learning to meet the needs of the future.

Research on human cognition and learning suggests that part of the problem is with the current mode of instruction itself. Learning experiences that rely heavily on traditional direct instruction—where students are told exactly what to do and how to do it,

followed by drill and practice—may well prepare students to pass tests and exams; however, research shows that retention is weak at best. Students are unable to apply learned knowledge to solving novel problems, let alone to use it creatively.

Said another way, the traditional model of instruction often results in unproductive success: performance on tests and exams creates the impression of deep learning, but ultimately this is just an illusion, for it is possible to do well on tests and exams without deep understanding. Students, parents, teachers, educators, and policy makers are invariably and immediately able to relate to this phenomenon.

Learning experiences that place

●● *INSTEAD OF STARTING WITH DIRECT INSTRUCTION ON THE TARGETED CONCEPTS, PRODUCTIVE FAILURE ENGAGES STUDENTS TO WORK IN SMALL GROUPS TO GENERATE MULTIPLE IDEAS, SOLUTIONS, AND STRATEGIES FOR SOLVING COMPLEX NOVEL PROBLEMS THAT TARGET CONCEPTS THEY HAVE NOT YET LEARNED.* ●●



excessive emphasis on the outcomes of exams—tests you take individually, in resource-poor environments, mostly over short periods of time, and in controlled, decontextualized settings—can hardly be expected to transfer well or develop the competencies and skillsets necessary to tackle the future of work in a VUCA world.

So, what do we do?

Enter Productive Failure: a solution that is, in many ways, simple yet paradoxical. It is simple, because it turns the traditional mode of instruction on its head. It is paradoxical, because it intentionally designs for and leverages failure in initial problem-solving as the path to longer-term success: that is, deeper learning.

Instead of starting with direct instruction on the targeted concepts, Productive Failure engages students to work in small groups to generate multiple ideas, solutions, and strategies for solving complex novel problems that target concepts they have not yet learned. These problems are designed in a principled way to admit multiple solutions, activate students' formal as well as intuitive knowledge and ways of thinking, induce failure in problem-solving to make students aware of the limits of their own knowledge, and increase the motivation for and situational interest in learning the correct solutions.

Thus conceived, Productive Failure engages students in the creative and

design processes of divergent exploration and invention, reinvention, and refinement, while working in small groups to persist through struggles and failure in problem-solving. And it is precisely this failure that prepares them to learn from subsequent consolidation and knowledge assembly orchestrated by the teacher.

To be clear, Productive Failure is not just another education fad or bandwagon. It has been vigorously tested, reproduced and independently replicated in several countries around the world, including Singapore, India, Germany, Australia, Canada, and the USA. Findings from both randomized controlled and quasi-experimental studies show that productive failure develops significantly better understanding and knowledge transfer than traditional direct instruction.

Furthermore, when implemented in the curriculum over a longer period, Productive Failure affords powerful opportunities for students to develop critical and creative dispositions, comfort with uncertainty and ambiguity, intellectual playfulness, persistence amid struggle and failure, resilience, and teamwork—the very skillsets and dispositions needed in a VUCA world.

In the final analysis, Productive Failure offers a clear and compelling solution to this urgent and challenging problem. It is by no means the only solution, but it is one that is low cost, practicable in real classrooms across a range of student abilities, ages, and countries, and, most importantly, supported by robust scientific theory and evidence.

What we need now is strong political will, coupled with policy structures that create stakeholder buy-in as well as incentivize classroom innovation and teacher professional development in order to implement and scale solutions such as Productive Failure in the education system. ■

Manu Kapur promotes research on learning in Higher STEM Education as Chair of Learning Sciences and Higher Education at ETH Zurich. He is widely known for his research on Productive Failure. Previously, he worked at universities in Singapore and Hong Kong. Kapur earned a PhD in Instructional Technology and Media from Columbia University, USA.

Peace & Conflict

Authored by: **Liliya Yakova & Stacey Connaughton**



Peaceful Solutions Can Be Locally Led

*Peacebuilding and violence prevention
in the future may increasingly need to
be driven by those local to conflict.*

Every year, war and armed conflict affect the lives of many. According to a 2017 estimate by the International Institute for Strategic Studies, 40 active inter- and intra-state conflicts around the world resulted in 167,000 fatalities in 2015.

Armed conflict destroys human life, but its consequences go beyond the loss of life. As scholars of conflict argue, war is a development problem because war is often triggered by inequality and resource competition. War leads to refugee issues, infrastructure devastation, long-term social, political, economic, and environmental instability.

Peace creates conditions for development so productive ways to build peace and prevent conflict are needed. As suggested in a 2015 Guardian article, this is particularly evident now due to the increasing aversion of Western states and allies to intervene in armed conflict and build peace outside their borders. Because of this, peacebuilding and violence prevention in the future may increasingly need to be driven by those local to conflict.

As scholars and practitioners of political violence prevention in West Africa and Central America, we have witnessed the benefits of locally led peacebuilding. Our involvement as members of the Purdue Peace Project (PPP), a political violence prevention initiative collaborating with individuals in El Salvador, Ghana, Liberia, and Nigeria, has shown that an effective way to address conflict, build security, stability, and economic resilience in vulnerable places, is locally led peacebuilding.

Locally led peacebuilding is “an approach in which the people involved in, and most affected by, violent conflict work together to create and enact their own solutions to prevent, reduce, and/or transform the

conflict.” The term “local” refers to those in country versus international agencies or outside actors. “Local” also means the inhabitants of a community or region in conflict in contrast to national-level organizations. In locally led peacebuilding, outsiders are those not immediately affected by the conflict (e.g., academics, NGOs, aid workers, funders). In an interconnected world where global factors may contribute to local conflicts, the role of outsiders is to encourage and support the efforts of locals leading peacebuilding.

Our experiences in West Africa and Central America demonstrate that locally led peacebuilding offers the potential to address situations that lead to underdevelopment and insecurity. We refer to two examples from PPP’s work to demonstrate how this is possible:

Chieftaincy Dispute, Tuobodom, Ghana

For decades, the people of Tuobodom, a town in the Brong Ahafo Region in central Ghana, have lived in conflict over a chieftaincy dispute between two royal families. Over the years, this conflict has resulted in loss of life and injuries. It has contributed to a general state of fear in the community. Tuobodom citizens have been unable to find employment because of stigma associated with being from Tuobodom. The conflict has also led to underdevelopment in the town. In August 2016, with support from PPP, local citizens brought together representatives of the two factions. Chiefs, elders, religious leaders, politicians, youth, and other community members engaged in peacebuilding by coming together for the first time in decades. The mere act of coming together in one place to dialogue about how to resolve the conflict was symbolic of the potential for peace. Recent peace activities in Tuobodom (e.g., soccer tournaments, concerts,

a peace march), that bring together citizens from both factions are new opportunities to inspire unity and a peaceful Tuobodom that can grow economically.

Violence Associated with Motorcycle Taxi Drivers, Liberia

In 2013, the PPP convened a group of Liberians employed as pen-pen drivers (motorcycle taxi drivers), among others. Together, these drivers formed a local peace committee called the Pen-Pen Peace Network (PPPN) to promote peace among pen-pen drivers, many of whom fought during the Liberian Civil War (1989-2003). Pen-pen drivers contribute to the Liberian economy. However, pen-pen drivers have been involved in armed robberies, mob violence before and during political elections, and conflicts with the Liberia National Police (LNP) and customers. Since 2014, the PPPN has been designing and implementing activities to promote peaceful behavior among pen-pen drivers, engaged them in their Ebola prevention campaign, and are now working with pen-pen drivers in several counties towards peaceful 2017 general elections. So far, the PPPN’s efforts achieved collaborative relationships between pen-pen drivers and the LNP, as well as more peaceful behaviors among the pen-pen and others involved with them. Such contributions have supported stability around a key sector of the Liberian economy.

We do not argue that locally led approaches to peacebuilding are the solution to all conflict and instability. We recognize the challenges of locally led peacebuilding. However, we have observed the importance of local ownership of conflict and its solutions. Locally led approaches have the potential to bring peace and foster stability that may contribute to resilience and development over time. ■

●● PEACE CREATES CONDITIONS FOR DEVELOPMENT SO PRODUCTIVE WAYS TO BUILD PEACE AND PREVENT CONFLICT ARE NEEDED. AS SUGGESTED IN A 2015 GUARDIAN ARTICLE, THIS IS PARTICULARLY EVIDENT NOW DUE TO THE INCREASING AVERSION OF WESTERN STATES AND ALLIES TO INTERVENE IN ARMED CONFLICT AND BUILD PEACE OUTSIDE THEIR BORDERS. ●●

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Languages

Authored by: **Akshan de Alwis**



Language Rights Need to be at the Center of Global Policy

Due to globalization processes languages are under threat or disappearing altogether. When languages fade, so does the world's rich tapestry of cultural diversity.

Languages, with their complex implications for identity, communication, social integration, education and development, are of strategic importance for people and planet. Yet, due to globalization processes, they are increasingly under threat, or disappearing altogether. When languages fade, so does the world's rich tapestry of cultural diversity. Opportunities, traditions, memory, unique modes of thinking and expression — valuable resources for ensuring a better future — are also lost.

More than 50 percent of the approximately 7,000 languages spoken in the world are likely to die out within a few generations, and 96 percent of these languages are spoken by a mere 4 percent of the world's population. Only a few hundred languages have genuinely been given pride of place in education systems and the public domain, and less than a hundred are used in the digital world.

Cultural diversity and intercultural dialogue, the promotion of education for all and the development of knowledge societies are central to UNESCO's work. But they are not possible without broad and international commitment to promoting multilingualism

and linguistic diversity, including the preservation of endangered languages.

While the United Nations Educational, Scientific and Cultural Organization (UNESCO) has signed an agreement with the International Association for the Evaluation of Educational Achievement (IEA) to measure global citizenship and sustainable development education, the persistent marginalization of mother languages worldwide is threatening Goal 4 of the UN for Sustainable Development Goals (SDGs).

The Agenda 2030 includes seven targets in Goal 4 that aims to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”.

The seventh target – Goal 4.7 – obliges the international community to ensure that in the next 15 years “all learners (would) acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development”. >

●● MORE THAN 50 PERCENT OF THE APPROXIMATELY 7000 LANGUAGES SPOKEN IN THE WORLD ARE LIKELY TO DIE OUT WITHIN A FEW GENERATIONS, AND 96 PERCENT OF THESE LANGUAGES ARE SPOKEN BY A MERE 4 PERCENT OF THE WORLD'S POPULATION. ●●

Languages

› UNESCO relates global citizenship to the empowerment of learners to assume active roles to face and resolve global challenges and to become proactive contributors to a more peaceful, tolerant, inclusive and secure world.

But the chances that Goal 4.7 would be achieved are rather bleak unless adequate steps are taken urgently. The reason can be deduced from some important data released by the UNESCO on the occasion of the International Mother Language Day, celebrated annually on February 21.

According to a new paper by UNESCO's Global Education Monitoring Report (GEM Report), 40% of the global population – the combined population of China, India and the United States – does not access education in a language they understand.

Economic linguists – those that study the economics associated with language policy – have noted that the immediate and long term economic benefits of mother tongue education out-weigh the cost when compared to not implementing mother tongue education policy.

UNESCO also points out that more than 50 per cent of about 7,000 languages spoken in the world are likely to die out within a few generations, and 6,720 of these languages are spoken by a mere 4 per cent or 296 million, slightly less than the population of Indonesia. “Only a few hundred languages have genuinely been given a place in education systems and the public domain, and less than a hundred are used in the digital world,” says UNESCO.

The GEM Report titled ‘If you don't understand, how can you learn?’ argues that being taught in a language other than their own can negatively impact children's learning, especially for those living in poverty.

Marking the Mother Language Day last year, UNESCO Director-General Irina Bokova underlined the basic principle of children learning in a language they speak. “With a new global education agenda that prioritizes quality, equity and lifelong learning for all, it is essential to encourage full respect for the use of mother language in teaching and learning, and to promote linguistic diversity. Inclusive language education policies will not only lead to higher learning achievement, but contribute to tolerance, social cohesion, and, ultimately, peace.”

The study finds that learning improves in countries that have invested in bilingual programs. In Guatemala, students in bilingual schools have lower repetition and dropout

●● *EDUCATION POLICIES SHOULD RECOGNIZE THE IMPORTANCE OF MOTHER TONGUE LEARNING. A REVIEW OF 40 COUNTRIES' EDUCATION PLANS FINDS THAT ONLY LESS THAN HALF OF THEM RECOGNIZE THE IMPORTANCE OF TEACHING CHILDREN IN THEIR HOME LANGUAGE, PARTICULARLY IN EARLY GRADES.* ●●

rates. They also have higher scores in all subject areas. Children in Ethiopia who participated in bilingual programs for eight years improved their learning in subjects across the curriculum, says the document.

According to the paper, countries with colonial histories often find that shifting to bilingual education is complicated, as can be seen in many Latin American contexts that continue to use Portuguese, or Spanish, or in many Francophone African countries, where French remains the predominant language of instruction.

The GEM Report's World Inequality Database on Education (WIDE) shows that this trend seriously hampers students' chances of learning.

In Côte d'Ivoire, for example, 55% of grade 5 students who speak the test language at home learned the basics in reading in 2008, compared with only 25% of those who speak another language.

In Iran, 80% of grade 4 students who did not speak Farsi at home reached the basics in reading, compared with over 95% of Farsi speakers.

In Honduras, in 2011, 94% of grade 6 students who spoke the language of instruction at home learned the basics in reading compared to 62% of those who did not.

In Turkey in 2012, around 50% of poor non-Turkish speaking 15 year olds achieved minimum benchmarks in reading, against the national average of 80%.

In multi-ethnic societies, including Turkey, Nepal, Pakistan, Bangladesh and Guatemala, the paper shows that imposing a dominant language through a school system – while sometimes a choice of necessity – has frequently been a source of grievance linked to wider issues of social and cultural inequality.

Aaron Benavot, Director of UNESCO's GEM Report says language can serve as a double-edged sword. “While it strengthens an ethnic group's social ties and sense of belonging, it can also become a basis for their marginalization. Education policy must ensure that all learners, including minority language speakers, access school in a language they know.”

The paper offers key recommendations to ensure that children are taught in a language they understand:

1. At least six years of mother tongue instruction is needed so that gains from teaching in mother tongue in the early years are sustained.
2. Education policies should recognize the importance of mother tongue learning. A review of 40 countries' education plans finds that only less than half of them recognize the importance of teaching children in their home language, particularly in early grades.
3. Teachers need to be trained to teach in two languages and to understand the needs of second-language learners. Teachers are rarely prepared for the reality of bilingual classrooms, including with inclusive teaching materials and appropriate assessment strategies. In Senegal, only 8%, and in Mali, only 2% of trained teachers expressed confidence about teaching in local languages.

UNESCO Director-General Bokova emphasized that “mother languages in a multilingual approach are essential components of quality education, which is itself the foundation for empowering women and men and their societies”.



With this in view, UNESCO’s Education 2030 Framework for Action, a road-map to implement the 2030 Agenda, encourages full respect for the use of mother language in teaching and learning, and the promotion and preservation of linguistic diversity, noted Bokova.

“Multilingualism is essential to drive these objectives forward – it is vital for success across the 2030 Agenda, regarding growth, employment and health, as well as sustainable consumption and production, and climate change,” she added.

Bokova assured that UNESCO brings the same focus to advancing linguistic diversity on the Internet, through support

to relevant local content as well as media and information literacy.

Through the Local and Indigenous Knowledge Systems (LINKS) programme, she said, UNESCO is highlighting the importance of mother and local languages as channels for safeguarding and sharing indigenous cultures and knowledge, which are vast reservoirs of wisdom.

When it comes to the SDGs and the law, language considerations are paramount. SDG 16, which calls for “peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institution at all levels,” implies that an individual’s rights

guaranteed under Article 2 of the Universal Declaration of Human Rights must be incorporated into the SDGs regardless of the language spoken by an individual. Yet the SDGs do not address language services such as translators and interpreters necessary to ensure that already disenfranchised speakers of minority or foreign languages are not burdened with ensuring adequate and fair representation under the law. ■

Akshan de Alwis is Diplomatic Courier Magazine’s UN Correspondent, based in New York City reporting from the UN’s Headquarters.

Relais & Chateaux's Eden Roc at Cap Cana Completes Addition of Luxury Two-Bedroom Beach-Front Suites

New beachfront suites double accommodations, open April 1 at ultra-luxury Dominican Republic resort

March 23, 2017 (Punta Cana, Dominican Republic) – The Dominican Republic continues to increase its offerings as a luxury destination with Eden Roc at Cap Cana's completion of 26 Two-Bedroom Beachfront Suites, rounding out an expansion that has already revealed a completely renovated Beach Club with infinity pool; ocean view fitness center equipped with state-of-the-art machines, aero yoga and wellness areas; BLUE Grill + Bar; and refreshed private beach with bar.

One of just four Relais & Chateaux properties in the Caribbean – and only in the Dominican Republic – Eden Roc presents the most diverse suites offering with lavish, casita-style Boutique Suites and two multi-bedroom villas, all with private pools and remarkable comforts, and now premium beachfront suites.

New Beachfront Suites

Eden Roc at Cap Cana's guest accommodations are now twice as nice with the new 26 Two-Bedroom Beachfront Suites – each with

●● **TWO NEW ROOM TYPES ARE AVAILABLE AT THE EDEN ROC CAP CANA - BEACHFRONT ONE-BEDROOM SUITES (1,194 SQ. FT.) AND BEACHFRONT TWO-BEDROOM SUITES (1,786 SQ. FT.)** ●●

stunning ocean views – increasing the resort's overall inventory to 60 all-suite rooms.

Two new room types are available at the Eden Roc Cap Cana – Beachfront One-Bedroom Suites (1,194 sq. ft.) and Beachfront Two-Bedroom Suites (1,786 sq. ft.). A rustic palate of sand and gray tones fill the rooms with light and are mixed with natural woods and chic fabrics to create an elegant rustic atmosphere in paradise. The decor stays true to the destination with handmade Dominican art and sculptures in each suite. All suites have a full ocean view with a terrace or balcony – a new distinction for the resort.

Plush goose down feather duvets and pillows by Hanse, with luxurious bed linens, plush bathrobes and slippers by Rivolta Carmigani ensure a good night's rest in each King size bed. Stylish bathtubs, contemporary rain shower heads and a large-scale cedar wood walk-in closet add to the luxurious living at Eden Roc Beach Club.

Bedrooms and living spaces feature satellite TV on 55-inch LCD flat screens, entertainment system with Bose surround sound speakers, and a smart technology iPad to control light, electronics and sound via the resort's dedicated app. A work area, full kitchen and dining set for six people round out the new accommodations experience.

As with every Eden Roc at Cap Cana stay, all rooms include private transportation from and to Punta Cana International Airport, full American breakfast (served daily at the BLUE Grill + Bar and Mediterraneo restaurants), Wi-Fi, and daily housekeeping and concierge service.

Located at the exclusive Eden Roc Beach Club and blending urban, rustic and chic styles with an oceanfront view, BLUE Grill + Bar offers tasty and healthy dishes inspired



by the art of Robotayaki and Nikkei cooking techniques, a culinary fusion between Japanese and Peruvian cuisine.

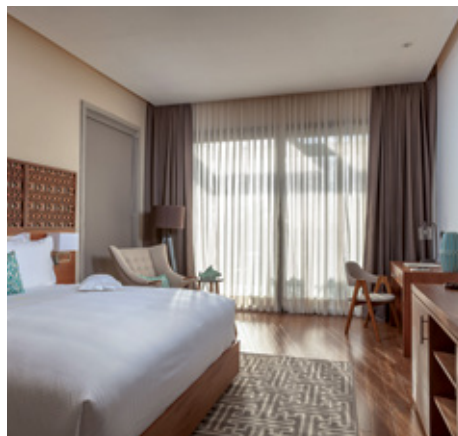
The private Beach Club extends the resort out to the Caribbean Sea and provides an intimate setting shaded by palm trees, thatched umbrellas and daybeds. In addition, the resort boasts three dining outlets, spa and fitness facilities, and access to the endless amenities of the Cap Cana community. Guests will enjoy world-class golf, a full marina, equestrian center and



outdoor pursuits from zip lining to water sports, and more.
Four-nights required. Book now until April 30, to travel April 1st until December 22nd 2017.

About Eden Roc at Cap Cana

Eden Roc at Cap Cana is a five-star Relais & Chateaux resort nestled in Cap Cana, the most exclusive gated beachfront community of the Dominican Republic. The 30,000-acre community is home to pristine beaches, towering cliffs and tropical forests, a bustling



marina, and the No. 1 golf course in the Caribbean and Mexico, a Jack Nicklaus signature course. Blending the impeccable standards of the French and Italian Rivièras with the warmth and relaxed charms of the Caribbean, Eden Roc at Cap Cana presents 60 all-suite accommodations – lavish Boutique Suites and two multi-bedroom villas, all with private pools and remarkable comforts, and new 26 two-bedroom beachfront suites revealed in Spring 2017. The resort recently enhanced its beach club with Blue Flag certified private beach to add an infinity pool and Nikkei-themed BLUE Grill + Bar. Culinary experiences also include fine-dining Mediterraneo Restaurant with Executive Chef Gianluca Re Fraschini at the helm; oceanfront La Palapa, featuring international cuisine with traditional local influence; and a visiting celebrity chef series providing one of the most diverse gastronomic experiences in the Caribbean. Eden Roc at Cap Cana boasts world-class spa and fitness facilities, a kids club for children ages 4-12 and intimate function space for corporate retreats and events. The Forbes Travel Guide recognized resort is a proud member of Virtuoso Hotels & Resorts, as well as Ensemble Travel Group,

Altour Hotel Collection, Fine Hotels & Resorts, AAA, Signature Travel Network and the International Association of Golf Tour Operators.

About Relais & Châteaux

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For more information about **Eden Roc at Cap Cana**, please call **(809) 469-7469** or visit **www.edenroccapcana.com**





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Converting the Halo Effect to a Virtuous Cycle: How Infrastructure Sustainability will Unlock Sustainable Infrastructure and the Capital Needed

“Infrastructure is good! It creates jobs and stimulates the economy.” Well that is not necessarily true, especially when the wrong infrastructure solution is implemented or when infrastructure is poorly delivered and operated. The upstream and downstream impact on the economy, society and environment can be massive and compromise the infrastructure’s social licence, thus affecting financial performance and future investments. If we don’t acknowledge and deal with the macro misnomer that ‘infrastructure is good’, then the gap will continue to exacerbate between attracting private capital and sufficient suitable project availability. This is an OECD and non-OECD issue.

This perception is what I am terming the halo effect of infrastructure. Donors, multilaterals and sovereigns, as well as capital and service providers, respond by encouraging the identification of and investment in ‘sustainable infrastructure.’ The Brookings Institution article titled “Delivering on sustainable infrastructure for better development and better climate” associated with the comprehensive paper with the same title (authored by Amar Bhattacharya, Joshua P. Meltzer, Jeremy Oppenheim, Zia Qureshi and Nicholas Stern published Friday December 23, 2016) enshrines this response very well and provides a valuable first principal definition, the current context, trends and drivers for the need for “sustainable infrastructure”.

Sustainable infrastructure can and should be the means to decarbonise the global economy, deliver on the sustainable development goals and be a practical means, through each investment, to facilitate social and economic equity, sustainable production and resource utilisation. It is also a fundamental lever to protect biodiversity habitats, indigenous communities and heritage while enabling cities and regions

to be resilient to change. In contrast, ‘bad infrastructure’ tends to accelerate current negative impacts including biodiversity habitat destruction, climate change and social and economic inequity, again reinforcing the message conveyed in the Brookings’s article.

As opportunities and investments pitched as sustainable infrastructure solutions rapidly grow, there is a risk that the halo effect extends to what should be positive and effective approaches to infrastructure delivery. While there are detailed business cases that carefully set out bank ability and fund ability of a project, many of the critical sustainable infrastructure attributes can get stripped out at procurement and through “value” engineering exercises resulting in “unsustainable” infrastructure outcomes. This danger is not a hypothesis, these scenarios unfold all the time, whether the investment is a road or a port or a wind farm. So how can we as an industry ensure that each, and every “sustainable infrastructure” asset is planned, procured, delivered and operated in accordance with the Brookings article sustainable infrastructure definition?

The answer is infrastructure sustainability, no this is not semantics. The tools and processes are available and have been deployed by originations like Infrastructure Sustainability Council of Australia (ISCA). Infrastructure sustainability (IS) is defined as infrastructure that is planned, designed, constructed and operated to optimise environmental, societal and economic outcomes over the long term. (IS Technical Manual, Version 1.2, 2016). This is achieved through developing and facilitating the systematic deployment (including significant ongoing industry consultation) of applied quadruple bottom line benchmarked performance and rating tools. ISCA’s IS rating scheme, for example, has a current coverage which addresses stakeholder engagement and

community participation, heritage, resource efficiency, emissions, pollution and waste, management and governance, climate change risk, biodiversity and energy and carbon. The scheme is granulated to 44 credits benchmarked from business as usual to industry best practice. The benchmarked range reflects the sustainability performance spectrum which is essentially business as usual (which is different in different jurisdictions) to net gain (which is the ultimate goal to reverse so many of the cumulative infrastructure impacts locally and globally). The IS rating scheme has been applied to over \$82B of new build infrastructure projects (most asset classes, capital values and contract types) and over \$60B of current asset operations (e.g. airports, waste water treatment facilities, road networks and so on). The scheme is not a construction green tick, rather it is a whole of life sustainability performance framework where ratings can be achieved at the end of design, construction and through operations. The rating is independently verified by third party. Each rating process is a collaborative journey with the client and project team to ensure the best outcomes can be realized including reducing costs, mitigating risks, and enhancing social and environmental outcomes. Importantly the process starts off with a materiality assessment (an adjustable weighting assessment) which identifies the key risks and opportunities from a sustainability perspective for the project and asset.

The IS rating scheme is inherently aligned with many of the Sustainable Development Goals and therefore immediately assists an asset and its associated organizational entities to be able to report on SDG performance and establish an improvement pathway and trajectory. The scheme complements incumbent policies, standards, safeguards and regulation and not duplicate. Because of international partnerships established by

ISCA, the same modus operandi is applied in the scheme but is flexible to local tailoring, addressing unique cultural elements.

The next generation of the rating scheme is dealing with some of the typical “elephants in the room” like best practice in business cases, inclusion of externalities, benefits realization, indigenous inclusion, skills and jobs creation for the long term, and social and ethical procurement (and consequently picks up many aspects of human rights issues). ISCA also recognizes the importance of data and is therefore looking into how deploying the IS scheme can assist organizations, projects and assets be more data ready so that the right data can be collected and used to enhance decision making and other business processes. By making the information and data collection more efficient for pursuing an IS rating, the scheme will continue to reduce burden and unlock beneficial outcomes.

Infrastructure sustainability is the applied means of ensuring the more principle based “sustainable infrastructure” attributes and expectations on an investment by investment or project by project basis are identified, performance expectations established (for construction, operation and deconstruction) and embedded and measured throughout the assets life from planning through to delivery and operations. The resultant Infrastructure Sustainability Rating should be considered just as vital as a financial rating and the underpinning data, objectives and targets should be used to assist with investment/project/asset decision making. The fact that it is a project/asset rating engaging all key elements of the supply chain and drives industry collaboration and competition, another healthy change management lever to drive performance.

Importantly, rating tools and self-assessment frameworks like IS can also be applied to current operating assets, to benchmark, identify areas of improvement and ensure effective implementation and outcomes realised. In fact globally the IS rating scheme, IS for Operations, is the only one that has a rating bespoke for assets and asset managers for sustainability.

Infrastructure Sustainability frameworks and rating tools need to be benchmarked locally and aligned globally where possible and a performance regime established encouraging beyond business as usual solutions and outcomes. This sends the right market signals, as this occurs (as we have seen in Australia and New Zealand) smarter

more sustainable products and materials are brought to market more competitively, the construction sectors innovation shackles are unlocked and so on. The pursuit of the sustainability rating then advances in earnest through detailed project design and construction. The more clients that mandate and register projects to undertake the voluntary rating scheme prior to procurement and make the rating a contractual requirement in the design and operations, the more competitive the industry becomes and step changes occur. Intelligent (and self-benefiting) deployment of the IS scheme encourages knowledge sharing and collaboration even in very restrictive contractual arrangements. Performance against them can become an indicator of performance in other areas from financial to safety and quality, and should be utilised as a fundamental risk management and opportunity realisation framework (including improving bottom line performance where possible).

Through engagement with a number of countries in Asia, ISCA has learnt that deployment of the IS scheme becomes a rapid local regulatory backfill empowering the project proponents, particularly in an environment where there is inter-governmental corruption. In countries where there is policy and economic inertia (or reversion ... to coin a phrase) particularly regarding governance, environmental and social issues (including climate change, environmental protection and restoration and human rights and equity issues), deployment of the IS scheme backfills and reinforces regulatory frameworks and environments which typically result in sovereign and other risks impeding local and international investment.

Correspondingly we have also observed that systematic deployment of the IS scheme can result in green and red tape reduction, reducing planning and approval costs and at the same time establishing a collaborative model between regulators, project procurers and deliverers to work towards the best environmental or social outcome (e.g. noise or soil reuse).

This nexus between “sustainable infrastructure” and “infrastructure sustainability” should be utilised by sovereigns, donors and multilaterals, and institutional investors to be able to identify more of the “right” projects and consequently unlock billions (if not trillions) available for



ISCA CEO and a Federal Minister awarding a project for an Infrastructure Sustainability rating.

investment (but currently being held back).

There has been international interest in ISCA and the IS scheme as mentioned previously for some time now. The approach we follow is to establish partnerships providing access to tools, training, processes and communities of practise. It is clear that local tailoring of the scheme is facilitates institutional “ownership” triggering a whole of industry adoption of infrastructure sustainability principles and processes. This is how ISCA’s partnership with China is progressing where we are assisting a local NGO to develop a China version of IS and in parallel engaging with key Central Government Bureaus.

At the risk of suggesting that “infrastructure sustainability” is some sort of panacea (where it could be at times if leveraged appropriately), systematic deployment of schemes like ISCA’s from planning and in parallel across current assets, can result in cities, policy makers, planners and operators pragmatically and quickly understanding what a smart, resilient and healthy city and town might look like for them. This statement is predicated on the observation that infrastructure underpins our cities and “dumb infrastructure” will ensure smart, resilient and healthy cities can never ultimately be realised, whereas the converse is obviously true.

Infrastructure sustainability enables more effective and efficient planning, designing and delivery of infrastructure as so many of the key issues are inherently unlocked throughout the process. ■

Antony Sprigg, CEO Infrastructure Sustainability Council of Australia

How Governments can Lead the Fight for Brand Owners' Rights

As any leading businessman can confirm, a strong brand is at the heart of a successful business. This meeting in Germany gives us the chance to reflect on the strengths of the many businesses that are built on outstanding brands and a reputation for high quality products and to discuss what our priorities should be to grow and protect those brands.

The International Trademark Association (INTA) is the global association that represents brand owners worldwide. It is our mission to protect the trademark rights that underpin these brands. INTA recommends that brand owners should prioritise the following challenges over the next 12 months: counterfeiting, protecting brands online and dealing with attempts to restrict the rights of businesses to use their brands as they see fit.

1. Tackling the counterfeiters

Counterfeiting is the most critical IP issue facing brand owners and consumers today.

It directly affects national security, the global economy, and poses significant health and safety risks for consumers and their communities.

The growing economic impact presented by counterfeiting has been underlined in the findings of a few recent key research studies. Ten years ago, in 2007, worldwide counterfeiting was valued at an estimated US\$250 billion and accounted for 1.8% of world trade. Last year, a 2016 report by the Organisation for Economic Co-operation and Development (OECD) estimated that in 2013, these numbers rose to US\$461 billion and 2.5% respectively. In addition, a 2017 report (commissioned by INTA and the International Chamber of Commerce–Business Action to Stop Counterfeiting and Piracy (ICC-BASCAP)) forecasts that international trade in counterfeiting will more than double over the next few years to US\$991 billion by 2022.

These studies reveal a simple fact: counterfeiting is a profitable, low-risk, high-reward business. Counterfeit goods can often be sold for ten times the amount it costs to manufacture, and the risk is low.

In an increasingly integrated global economy, the task of combating counterfeiting is one that rests with all stakeholders in all corners of the world, and with the active players at all stages of the supply chain. But as the primary victims (along with consumers) brand owners need to make their voice heard.

Addressing the issue at the source – going after the counterfeit factories wherever they are located – is critical, but it is only one piece of the puzzle. Even more important is dealing with how easy it now is to buy counterfeits. Consumers are increasingly moving online to do their shopping and the counterfeiters have followed. By 2020, there will be 6.1 billion smartphone users globally; led by growth in less-mature markets; and in



about five years', over 70% of the world's population will be online.

International criminal networks are creating hundreds of websites – on servers across multiple jurisdictions – selling the same counterfeit products. Every time a consumer receives a counterfeit product when they thought they had found a bargain genuine product online, the value of the counterfeited brand diminishes. Arresting counterfeiters selling their products online is difficult as they can very quickly shut down one website and replace it with another.

The fightback against such a difficult enemy will be difficult. Our goal is to convene all those with a part to play, to open communication channels between them, and to foster meaningful collaboration among them. We aim to put brand owners at the centre of the debate and make sure that their voice is heard.

2. Taming the internet

While the internet has in some ways been a boon for brand owners, allowing them to reach more consumers than ever before, it can also be a threat. In addition to facilitating the sale of online counterfeits, the expansion of the domain name system can be extremely challenging and just as damaging when

it comes to protecting brands.

In 1995, less than 1% of the world's population had an internet connection. Today, more than 3.5 billion people are online, and it is estimated that 10 more people come online every second! The internet is an integral part of our daily lives, and in the operation of our businesses, stock markets, and government agencies. Global business-to-consumer e-commerce is growing at an incredible rate. In 2012, it surpassed \$1 trillion. By 2015, it more than doubled to \$2.2 trillion. Consumers in the Asia-Pacific region are responsible for more than half of online shopping, followed by North America, accounting for around a quarter, or \$644 billion, of all business-to-consumer sales in 2015.

It is in brand owners' interests to ensure that trademarks receive the same protection on the internet as they do in the brick-and-mortar world, and that consumers can make safe, reliable, and informed choices about the products and services they seek online. Brand owners' voices are critical to the security and stability of the internet as they are on the frontlines of protecting consumers from fraud and abuse.

We are making sure that the voice of brand owners is heard at the Internet Corporation for Assigned Names and Numbers (ICANN),

which was created to ensure a secure, stable, and resilient Internet. INTA members are participating in key review processes that have a direct impact on the ability of brand owners to protect their names in the domain space.

For example, we have been the voice of brand owners during the launch of the Generic Top-Level Domains program (gTLDs). Brand owners may not know that acronym, but they will have heard of the launch of new domains such as .guru, .club and, more worryingly, .sucks and .xxx.

While some businesses have chosen to launch domains for their dot brand and create new channels for brand awareness and community building, most are closely monitoring the program to ensure that their brands are protected within the new domains. INTA is helping brand owners police and protect their brands.

3. Restrictions on using brands

In recent years we have seen increased regulations and legislation to restrict brand use including plain and standardized packaging, which reduces the use of trademarks on packaging or even bans them altogether.

This issue has been controversial because much of the focus recently has been on tobacco products as a means to deter people from smoking. As a result, governments have justified these brand restrictions as a public health issue and have not taken trademark rights into consideration. Although this may at first glance seem like a fight only for a few brand owners, these restrictions are increasingly being applied to non-tobacco products. For example, we have observed brand restrictions on baby formula and on fast-food, including pizza. These restrictions often dictate what images or logos may be applied to labels for these products.

The threat to brand owners is clear – reducing the right to use a trademark is a threat to business and an attack on the right to use the brand that has often taken years to build.

Looking Ahead

While these three challenges may at first look daunting, brand owners are not alone. We will continue to continue the fight against counterfeiting, to monitor and promote trademark rights in ongoing discussions on internet governance and expansion, to stress the implications for IP with regards to brand restrictions, and to advocate on behalf brand owners globally. With your help, we can succeed. ■



●● COUNTERFEITING IS THE MOST CRITICAL IP ISSUE FACING BRAND OWNERS AND CONSUMERS TODAY. IT DIRECTLY AFFECTS NATIONAL SECURITY, THE GLOBAL ECONOMY, AND POSES SIGNIFICANT HEALTH AND SAFETY RISKS FOR CONSUMERS AND THEIR COMMUNITIES. ●●

The Three Biggest Challenges for Brand Owners

In 2017, governments face many conflicting economic priorities. But the key priority as ever for the economy is to drive growth and maintain low unemployment. We believe placing brands and brand protection at the core of any economic policy will enable them to do that. Without the ability to build and protect a strong brand, businesses cannot invest for the long term.

At the International Trademark Association (INTA) we believe that there are three main threats that brand owners should prioritise for the next 12 months – counterfeiting, internet governance and expansion, and restrictions on the rights of brand owners. The key role government can play in all three areas is to be at the centre of the debate – to convene all the stakeholders and push for progress that has the rights of brand owners at its heart.

1. Building a global anticounterfeiting network

Counterfeiting is the most critical IP issue facing brand owners and consumers today. It directly affects national security, the global economy, and poses significant health and safety risks for consumers and their communities.

The growing economic impact presented by counterfeiting is highlighted in the findings of a series of recent key research studies. Ten years ago, in 2007, worldwide counterfeiting was valued at an estimated US\$250 billion and accounted for 1.8% of world trade. Last year, a 2016 report by the Organisation for Economic Co-operation and Development (OECD) estimated that in 2013, these numbers rose to US\$461 billion and 2.5% respectively. A 2017 report (commissioned by INTA and the International Chamber of Commerce–Business Action to Stop Counterfeiting and Piracy (ICC-BASCAP)) forecasts that international trade in

counterfeiting will more than double over the next few years to US\$991 billion by 2022.

These studies underline a simple fact: Counterfeiting is a profitable, low-risk, high-reward business. Counterfeit goods can often be sold for ten times the amount it costs to manufacture, and the risk is low as the penalties imposed for counterfeiting rarely includes long prison sentences. The internet has also made it much easier to reach and deceive consumers and while avoiding detection by using multiple websites.

In an increasingly integrated global economy, the task of combating counterfeiting rests with all stakeholders in all corners of the world, and with the active players at all stages of the supply chain.

Governments must play their part. Shipping and customs agents control key access points where goods enter their countries, including counterfeit goods. Customs is often a country's the first line of defence against counterfeiters. It is estimated that the value of counterfeit products imported into the EU was US\$90.9 billion in 2013. However, in that same year, the European Commission reported that EU Customs authorized seized goods valued at US\$821 million. The challenge for customs officials at all borders is enormous and we believe governments should prioritise increasing the seizure rate and providing support for customs inspectors around the world.

Anticounterfeiting advocacy and other proactive combative measures involve many players, including rights holders, customs officials, law enforcement, legislators, the IP offices, intermediaries, and consumers. To address this challenging issue, and combat the complex and global counterfeiting network, government needs to help establish a multi-stakeholder anticounterfeiting network that includes:

- Coordinated law enforcement across jurisdictional boundaries;
- Cooperation with intermediaries: search engines, shippers, payment providers, registries; registrars, online marketplaces and social media;
- Judiciaries imposing substantial penalties, and more criminal penalties on counterfeiters and those that help facilitate the counterfeiting activities;
- Rights holders working together, as they do in industry and trade associations;
- Partnership between the private and public sectors; and
- Industry helping government to understand the practical implications of policy and legislative decisions.

Only by working together can we weaken the criminal networks currently profiting from counterfeiting. We aim to work with governments to convene these stakeholders, open communication channels between them, and foster meaningful collaboration among them.

2. Dealing with the online threat

While counterfeiting is arguably the greatest threat to brand owners, grappling with the issues of internet governance and the expansion of the domain name system can also be extremely challenging.

In 1995, less than 1% of the world's population had an internet connection. Today, more than 3.5 billion people are online, and it is estimated that 10 more people come online every second! In 2012, global business-to-consumer e-commerce surpassed \$1 trillion. By 2015, it more than doubled to \$2.2 trillion. Consumers in the Asia-Pacific region are responsible for more than half of online shopping, followed by North America, accounting for around a quarter, or \$644 billion, of all business-to-consumer sales in 2015.

The Internet Corporation for Assigned Names and Numbers, widely known as ICANN, is responsible for managing the domain name systems. INTA, through its Internet Committee, is playing a key role in ensuring that ICANN fulfills its obligations

●● *IN AN INCREASINGLY INTEGRATED GLOBAL ECONOMY, THE TASK OF COMBATING COUNTERFEITING IS ONE THAT RESTS WITH ALL STAKEHOLDERS IN ALL CORNERS OF THE WORLD, AND WITH THE ACTIVE PLAYERS AT ALL STAGES OF THE SUPPLY CHAIN.* ●●

to maintain a secure, stable, and resilient Internet.

In 2012, ICANN launched the new Generic Top-Level Domains program (gTLDs). Over nineteen hundred applications were received for new domain strings which included dot brands, dot generic terms and Internationalized Domains. The first new gTLD string in non-roman script was delegated to a Chinese character string for “games” in October 2013. Today, more than 1,200 new names have been delegated. This programme has enabled some brand owners to launch their own domains, but has also increased costs for others, who need to ensure that their own trademark is not infringed in all the new domain names that are being launched (such as .sucks)

Governments need to ensure that trademarks receive the same protection on the internet as they do in the brick-and-mortar world, and that consumers can make safe, reliable, and informed choices about the products and services they seek online.

3. Dealing with restrictions on brand use

The growing restrictions on brands and trademark use present a threat to all business owners. Much of the focus recently has been on plain and standardized packaging on tobacco products as a means to deter people from smoking. As a result, governments have justified these brand restrictions as a public health issue, without regard for trademark rights. However, a dangerous precedent has been set and brand restrictions are increasingly being applied to non-tobacco products such as baby formula and on fast-food, including pizza. These restrictions often dictate what images or logos may be applied to labels for these products.

Despite a pending WTO case, a number of countries, primarily with advanced economies, have enacted plain packaging legislation for tobacco products and others are rapidly moving in that direction. This issue is being through legal challenges, but the situation looks dire for brand owners.

INTA’s Board approved a resolution in 2015, reinforcing the Association’s long-standing position on the issue of plain and





standardized packaging and citing violations of various international treaties regarding IP rights; and calls for governments to reject or repeal such legislation, and to use less drastic alternatives to address health and safety goals, such as public education campaigns. INTA has filed submissions on this issue with governments in more than 22 jurisdictions across Africa, Asia, Europe, and the Americas.

Since this issue first appeared, INTA has pressed governments to take a balanced approach in this area. This means considering the public health while also ensuring the integrity of their IP systems as a means to promote investment and economic growth and protecting the rights of brand owners.

Looking Ahead

Over the next 12 months we remain ready to work with governments to lead on these issues and combat the threats posed by counterfeiting, online infringement and restrictions on brand owners’ rights. We can only succeed if we work together. ■

THE GLOBAL ECONOMIC IMPACTS OF COUNTERFEITING AND PIRACY

	2013	2022 (forecast)
 Value of counterfeit and pirated goods.	US \$1.90 trillion	US \$2.81 trillion
 Displacement of legitimate economic activity.	US \$980 billion	US \$1,244 billion
 Wider economic and social costs.	US \$1.54 trillion	US \$1.87 trillion
 Employment losses.	US \$4.2 million	US \$5.4 million

Source: The Economic Impacts Of Counterfeiting And Piracy, A Report prepared for BASCAP and INTA by Frontier Economics

The International Trademark Association (INTA) is a global organization of over 7,000 trademark owners and professionals from over 190 countries. INTA is a not-for-profit membership association dedicated to supporting trademarks and related intellectual property in order to protect consumers and promote fair and effective commerce. INTA was founded in 1878 and is a leader in global trademark research, policy development, education and training. To learn more about INTA and its work around impact studies, visit www.inta.org/impactstudies.

Education

Authored by: **Christine Horansky**

It Is More Important Than Ever to Prepare Students to Navigate a Digital World

It is more important now than ever before, that we find ways to prepare the next generation to navigate life in a complex, ever-changing digital world.



In case anyone hasn't noticed, amidst self-driving cars and planned vacations to the moon: the future is here. The fast-paced onset of the space age, with all its promise and discontent, is causing many of us to catch our breath. For those of us still listening to TLC and Green Day, this year was a reminder that the future is arriving at breakneck speeds.

What will our future look like?

As always, the answer to that question is best answered by looking to young people.

In schools and homes across America, we find kids whose future lives will be a matrix of real-life and virtual worlds. The proliferation of mobile technology has become an internet of things. Texting is perhaps the closest humanity has yet come to telepathy. The Fourth Industrial Revolution has dramatically shifted us towards a knowledge-based creative economy.

It is more important now than ever before, that we find ways to prepare the next generation to navigate life in a complex, ever-changing digital world.

Today's K-12 students are more than just digital natives. They are the first generation born in the 21st century. As newsworthy as Millennials are right now, these are not Millennials. Millennials as a demographic are roughly defined as those born in the 80's and 90's. They hover around the 18-34 young adult market. Today's high-schoolers belong to an entirely new generation. And their world will look very different from the one we once knew.

How do we prepare students for a world we cannot yet imagine?

Public education is the quintessential public good and the bedrock foundation of American democracy. We need to teach students 21st century skills: skills such as critical thinking and problem-solving, communication and emotional intelligence, digital literacy and entrepreneurship. For today's schools and policymakers, there are some great lessons on integrating technology into curriculum that can be learned from the innovative work being done at the intersection of the education, business and non-profit spheres.

Digital education is becoming a hotter and hotter topic. Its wide range of applicability was on full display at the recent DigitalYou symposium in Georgia, where students researched, developed and presented

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coursework on issues that included cybersafety, cyberbullying, digital citizenship, the importance of managing a digital footprint in the age of social media, parenting in a digital world, and how online tools such as portfolios can be used to build career readiness.

The DigitalYou event was the brainchild of a partnership between AT&T Aspire, the philanthropic arm of the telecommunications giant, and DECA, a nonprofit with a mission to prepare young leaders for future careers. One adorable segment even featured teenagers teaching computer skills to the elderly. (Intergenerational learning for the win.) It was a prescient reminder that youth are not just students. They also have a lot to teach us.

The need to adapt to the new technologies shaping our world goes beyond young people. Citizenship itself is based on an informed and active populace that is able to learn, discuss and grow. For navigating the 21st century, digital literacy and media literacy now go hand in hand. The Knight Foundation is doing fascinating work on the future of libraries and how these venerated institutions can help prepare us for processing information in a digital age.

Careers in science, technology, engineering and mathematics (STEM) are a booming area

of interest. "According to code.org, there are 500,000 current computing job openings today, and they're growing at TWICE the rate of all other jobs," says Dean Tarpley, owner of The Coder School in Dallas/Fort Worth, which is opening two new schools. "That is a mind-blowing gap between the demand and supply of computing talent to our future job economy. We want to help close that gap by preparing and empowering our next generation of kids by teaching them how to code."

The internet of the future will be rife not only with uncharted waters but also new opportunity. As someone who grew up in rural America, it is my great hope that the connective power of technology will allow us to move back into those communities and continue building upon our rich history to form new economic life streams based on knowledge, creativity and innovation.

As the world changes around us, may we learn and evolve with it. The future awaits. ■

Christine Horansky is the author of *Girl Power in the Age of the Millennials: Essays on Women, Youth and Global Social Change*.

Artificial Intelligence

Authored by: **Lauren Maffeo**

IT's Next Top Job Won't Be Done by Developers

*The robots aren't coming—
they're already here.*



The robots aren't coming—they're already here. The Oxford English dictionary defines artificial intelligence as "The theory and development of computer systems able to perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages." From Facebook using bots for suicide prevention to Mark Cuban's prediction that the world's first trillionaire will work in AI, this topic has earned exponential interest. That's due to an equal dose of fear and fascination.

Gartner's "Predicts 2017: Artificial Intelligence" report shares that client inquiries about AI grew 500 percent from 2014 to 2015. Executives want to know which AI tools they should invest in and how to deploy them across organizations. These are big questions in themselves. But there's also widespread fear that AI will get too good and start stealing jobs.

This fear is not unfounded. If we've already reached a point where some AI tools outperform humans, what will the future of work look like? If Gartner's forecast proves to be correct, it looks full of opportunity for some surprising players.

The first core prediction is that tech's biggest names won't lead the AI revolution. Instead, a slew of small vendors who provide chatbots for specific industries will give more business value than the likes of Google. This is a twist on the traditional "big corporate" conundrum where an industry giant overtakes small businesses. Instead, Gartner's report argues that enterprises should seek proposals from smaller AI vendors who can teach them new ways to innovate.

The second core prediction is a new IT role that AI will create. "By 2019, more than 10 percent of IT hires in customer services will write scripts for bot interactions," the report predicts.

Advances in forms of machine learning - like natural-language processing - mean that chatbots hold potential to make the customer experience easier, faster, and more satisfying. This is because chatbots can access knowledge about each customer and how similar customers replied in the past.

But chatbots are not enough in themselves. To reach their full potential, they need a great "navigator" to provide the best results. And although "chatbot scripter" might

●● *BUSINESSES THAT INVEST IN HIRING CHATBOT SCRIPTERS STAND TO EARN HUGE GAINS. IF THE RIGHT “NAVIGATOR” CAN BE HIRED TO DIRECT CUSTOMERS THROUGH THE CHATBOT TREE, THEN THE NEXT WAVE OF CUSTOMER INTERACTIONS MIGHT HAVE MUCH LESS FRICTION.* ●●

be IT’s next top job, it won’t be done by developers.

“Programmers are not the best choice to design customer service interfaces,” the report claims. Instead, its authors advise hiring people with customer experience who excel at internal communications and process articulation. These employees are best positioned to lead bot scripting for tools like live chat software. That’s due to the intricate, oddly human way that bot interactions work.

Chatbots are underpinned by a “decision tree” that’s built to direct customers to the results they need. AI has advanced this tree by introducing highly reliable speech to text. This creates “text tags” that are more effective at directing users where they need to go. Chatbot scripters can take this even further by tailoring each tree to meet unique customer needs. Their customer empathy and experience can help them find the most relevant customer keywords to move users throughout the tree.

Businesses that invest in hiring chatbot scripters stand to earn huge gains. If the right “navigator” can be hired to direct customers through the chatbot tree, then the next wave of customer interactions might have much less friction. The combination of human talent with smart machines means that contextual data can be used to skip steps in the tree as needed. It could even detect when user frustration signals the need for a human representative.

This is important since customers aren’t sold on chatbots yet. Research conducted by GetApp earlier this year found that more than one in three customers (37 percent) value talking to a person above all else. By contrast, just 12 percent prefer having no human contact at all.

These results imply that while customers expect better service, they don’t trust robots



alone to provide it. They still value a human touch that understands their needs. To bring this to life, businesses of all sizes should hire chatbot scripters with deep customer and business insights.

These essential skills are not within the scope of a traditional programmer’s role. That’s why Gartner’s forecast for the future of AI confirms previous predictions that to have a job in the automation age, employees must use strategy and communications skills that a robot can’t replace.

“Smart machines won’t run themselves, no matter what the movies and TV have shown since Fritz Lang’s *Metropolis*,” Gartner’s report says. “AI continues to drive change

in how businesses and governments interact with customers and constituents. And our 2017 predictions show that the humans—as is always the case in computing change—are the pivot on which AI can turn.” ■

Lauren Maffeo covers trends in the project management, finance, and accounting software industries for GetApp, a Gartner company. She focuses her research on strategies and tools to help small and midsize businesses create unique value. Lauren previously covered technology trends for *The Guardian* and *The Next Web*.

Free Trade

Authored by: **Julija Simionenko-Kovacs**

A Platform to Defend Free Trade

*The eroding support for free trade and open borders
has put globalization on the verge of retreat.*



During the World Economic Forum's annual meeting in January, globalization was among the top five priorities. The upcoming G20 Summit in July will provide another golden opportunity for heads of state and government to make the case for the benefits of free markets and to encourage countries to avoid harmful protectionist policies.

The eroding support for free trade and open borders has put globalization on the verge of retreat. Protectionists view the free flow of goods and people as a source of inequality and a threat to local jobs. This misconception arises because the gains from globalization are widely dispersed, while small losses are highly concentrated and more tangible. Governments often tend to reverse economic integration to protect the special interests that lose from globalization. Yet according to the Peterson Institute for International Economics, the overall gains from globalization outweigh losses by a ratio of at least 10 to 1. Countries should not undo years of integration, because the benefits from globalization are much greater for economies as a whole.

Defending globalization is in the best interest of the G20, which has dedicated special attention to global economic growth and international trade. Crucially, globalization would improve the sluggish global growth rate. Over the last six years, the global economy has on average been growing at only 2.6 percent per year, compared to 4.4 percent in 2010. One of the reasons behind this economic slowdown is a decline in global trade growth. Indeed, 2016 marked the fifth consecutive year of slow trade growth, witnessing only 1.9 percent trade growth, the weakest trade performance since the global financial crisis. The World Bank estimates that world trade grew at approximately 3 percent per year from 2012 to 2016, which is much lower than the pre-crisis average of 7 percent from 1994 to 2008.

Another reason for poor global economic performance is diminishing productivity growth. This is especially important for advanced economies, which experienced a sharp decrease in productivity growth over the last decade. For example, the United States ten-year average productivity growth rate declined from 2.4 to 1 percent over the last decade. Global efforts to liberalize trade and immigration would increase economic efficiency through higher competition and

fewer skill gaps. A common concern is that immigration and cheaper imports from abroad drive native-born workers out of jobs and put less productive local companies out of business. Immigration and higher competition, however, reduce labor shortages and encourage local businesses to search for new supply chains and more effective ways to use their resources, which increases productivity and economic growth.

In addition to leading to cheaper imports, greater investment, and higher productivity growth, promoting globalization would help the G20 address other issues on this year's agenda. Some of the most pressing challenges today include global security and escalating political tensions. International economic integration plays a significant role in reducing the incentives for conflict. As investment and business supply chains become more global, the costs of conflicts increase. Political disputes cause instability and uncertainty, which harm foreign and local businesses by disrupting production and distribution processes, and reduce foreign direct investment, thus decreasing the number of local jobs and government tax revenues. Higher participation in trade and investment therefore makes

it unprofitable for countries to pursue confrontational policies.

Globalization benefits the global economy as well as individual countries. The G20 Summit is a great opportunity to remind the world that free trade not only increases global well-being, but also makes for a more peaceful world. The G20 countries produce around 80 percent of global gross domestic product and account for three quarters of global trade. The summit could therefore have a considerable influence on countries' trade policies and could provide significant impetus for binding agreements. G20 leaders should therefore use their influence to encourage policies that capitalize on the benefits of globalization by promoting immigration, greater global investment, and free trade deals. ■

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●● GLOBALIZATION BENEFITS THE GLOBAL ECONOMY AS WELL AS INDIVIDUAL COUNTRIES. THE G20 SUMMIT IS A GREAT OPPORTUNITY TO REMIND THE WORLD THAT FREE TRADE NOT ONLY INCREASES GLOBAL WELL-BEING, BUT ALSO MAKES FOR A MORE PEACEFUL WORLD. ●●



Energy

Authored by: **Tobias S. Schmidt and Tyler Matsuo**

Making Fossil Fuel Subsidies Obsolete

Hybrid policies provide an opportunity for international organizations to move from being the scapegoat for driving up energy prices, to enablers of new, job creating alternatives.

In early 2012, the Nigerian government drastically cut diesel and petroleum subsidies causing local fuel prices to more than double overnight. Violent public protests broke out in response, leading the Nigerian government to quickly reinstate national fossil fuel subsidies. While the Nigerian case is extreme, it illustrates a common challenge facing many countries: Despite the recognized benefits of fossil fuel subsidy reform, the reality of subsidy removal can be a political nightmare. Past reforms focused on the politically unpalatable policy of making fossil fuels more expensive, ignoring the possibility that reform can also be tackled by making fossil fuels more obsolete.

Phasing out fossil fuel subsidies is crucial to avoid dangerous levels of climate change. Estimates of global fossil fuel subsidies range from the \$400–500 billion per year that the International Energy Agency cites for consumption subsidies, to the \$5.3 trillion IMF estimate that includes both production and consumption subsidies as well as external effects. While such numbers certainly grab headlines—especially when juxtaposed with estimates for support for low-carbon technologies (about \$120 billion) or Green Climate Fund pledges (\$100 billion)—they also risk masking the complexity of fossil fuel subsidy reform.

While the IMF figure attempts to capture some of the environmental or health impacts of fossil fuel subsidies, it still cannot reveal the effect these subsidies have on distorting public investments and creating political and social vulnerabilities as state budgets drain. Indeed, many cases of national subsidy reform occur in times of major fiscal imbalance, when international organizations, such as the IMF, step in with substantial loans and make their lending conditional on fossil fuel subsidy phase-out. However, in times of crisis, a government's capacity to manage the distributional impact of subsidy removal is often limited. While low international fuel prices temporarily suppress these negative consequences, subsidies may simply return as soon as international fuel prices rise.

Reducing fossil fuel subsidies to a single number may also give the idea that fossil fuel subsidy reform means simply reducing this sum. To date, subsidy reform has been synonymous with subsidy removal—or taking away a negative distortion. As a result, much work on fossil fuel subsidy reform has analyzed the political power balances

involved in subsidy removal, and concludes that subsidy phase-out should be coupled with an appeasement strategy to win buy-in from affected stakeholders. One common strategy therefore proposes a partial redistribution of the fiscal savings from the subsidy reductions to compensate stakeholder groups perceived as particularly powerful in opposing reform. Such approaches to subsidy reform are not only fiscally unsustainable, but also can only be a superficial solution to a much deeper socio-technical problem.

While the ultimate goal should be to reduce fossil fuel subsidies, strategies for achieving this goal need to better target the underlying energy systems that create the demand for cheap fossil fuels. Ultimately, it is this system that generates the economic and political rents that make fossil fuel subsidy reform difficult and short-lived. Combining reform with policies that incentivize technological change can thus help make subsidy reform more sustainable. In parts of Indonesia, for example, technology-oriented policies enabled the elimination of kerosene subsidies for cooking: As in Nigeria, public opposition thwarted earlier attempts to phase out kerosene subsidies. What enabled successful and permanent kerosene subsidy removal were policies that incentivized a significant number of consumers to switch to alternative cookers running on cleaner liquefied petroleum gas. These technology-oriented policies weakened politically powerful kerosene stakeholders and provided a cost-effective alternative for users, thereby reducing their dependence on—and thus their opposition to the removal of—kerosene subsidies. Such an approach could also work for other sectors such as transport, industry and electricity generation.

Hybridizing fossil fuel subsidy reform with technology-oriented policies also critically reframes the political economy of reform. Rather than a one-sided focus on removing a financial flow in an often already investment-starved economy, these hybrid approaches seek to build advocacy for subsidy reform by creating real economic activity. In the electricity sector, for example, policies that support emerging fossil-free technologies open the typically monopolistic sector to new independent power producers. Renewable energy technologies also can create local jobs in construction, maintenance and manufacturing. The emergence of these low-carbon actors entrenches new “green” interests in the sector, thus altering the



●● **REDUCING FOSSIL FUEL SUBSIDIES TO A SINGLE NUMBER MAY ALSO GIVE THE IDEA THAT FOSSIL FUEL SUBSIDY REFORM MEANS SIMPLY REDUCING THIS SUM. TO DATE, SUBSIDY REFORM HAS BEEN SYNONYMOUS WITH SUBSIDY REMOVAL—OR TAKING AWAY A NEGATIVE DISTORTION.** ●●

political balance of power in subsidy debates. Directing finances into low-carbon investments, rather than into the pockets of opposition stakeholders, also helps provide a natural sunset clause for public intervention – both by weening the energy system off of fossil fuels and by setting in motion processes of technological learning that drive down the cost of fossil-free alternatives. In many cases, low-carbon technologies are already cost-competitive; and diversifying the technology mix decreases the vulnerability of a country and its consumers to future fuel-price shocks.

Finally, it should be in the interest of international organizations to advocate for and, where necessary, financially support hybrid policies. These approaches provide an opportunity for international organizations to move from being the scapegoat for driving up energy prices, to enablers of new, job creating alternatives. The G20, comprised of leaders as well as laggards regarding fossil fuel subsidy reform and clean technology-oriented policies, could play an important role. The G20 could act as driver of ambitious targets for both fossil fuel subsidy reform and technological change and promote the exchange of experiences and best practices between the international community. ■

Editor's Note: This opinion piece is informed by the research performed by both authors. Relevant publications include: Matsuo, T. and Schmidt, T.S., 2017. Environmental Research Letters, 12(1); and Schmidt, T.S., Born, R. and Schneider, M. (2012). Nature Climate Change, 2(7)

Tobias Schmidt is an Energy Politics Professor at ETH Zurich where he earned his PhD in Management, Technology, and Economics. He was a post-doctoral visiting scholar at Stanford University, and consulted for the UN Development Programme. In recent years, he gave talks at T20 meetings in Turkey, Germany and China.

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Sustainable Development

Authored by: **Jeremy Oppenheim**

The Future of the Global Economy is in Sustainable Development

A growing wave of companies believe that prosperity can be achieved if it is founded on the principles of a more sustainable, inclusive model of economic growth.

The year 2015 was filled with positive achievements for our collective future, with the adoption of both the UN Sustainable Development Goals (SDGs) and the Paris Agreement. The year 2016 came as a stark contrast to 2015. Our assumptions about the global economy were shaken, with many asking whether the costs of globalization are greater than its benefits.

But the future of the global economy is not bleak. A growing wave of companies, including large multinationals, fundamentally believe that prosperity—whether on a global, national or individual level—can be achieved if it is founded on the principles of a more sustainable, inclusive model of economic growth.

The Business & Sustainable Development recently launched a report, *Better Business, Better World*, which provides conclusive research to support this view. Through arguments, case studies and data, the report convincingly demonstrates—perhaps for the first time—that SDGs, also called the Global Goals, offer a compelling growth strategy for the world economy, including:

- An economic prize of up to \$12 trillion by 2030 for the private sector, which could reach \$30 trillion through even broader Global Goal opportunities
- Up to 380 million jobs created by Global Goal business opportunities by 2030.
- 60 “hotspots” identified by the Commission across four economic systems – food and agriculture, cities, energy and materials, and health and well-being—which generate business revenue and savings equal to 10%

of forecast global GDP. These 60 Global Goals hotspots could grow 2-3 times faster than the global economy.

These 60 hotspots translate into real opportunities in several key sectors. To name a few: affordable housing—the single biggest market hotspot identified by the Business Commission—accounts for the creation of 70 million jobs and up to \$1 trillion in market value by 2030; circular models in the automotive industry are estimated to be worth \$475-810 billion; and the reduction of food waste in the value chain is estimated to be worth \$155-405 billion a year by 2030.

We must hear the report’s message loud and clear—and integrate SDGs into economic business and financial models across all sectors. We must also be realistic: in order for this new blueprint for business to reach its full potential, a good disruption must take place. It will require breakthrough technology such as digital platforms, as well as innovative financing tools. But the private sector will not be able to accomplish this alone. Government must be an active partner to scale sustainable markets through smart regulation and forward-looking policies, in particular:

- Establishing the right prices for natural resources. Today’s prices for carbon, water and energy do not reflect environmental or social externalities. Business leaders must work openly with regulators, business and civil society to shape fiscal and regulatory policies that create a level playing field more in line with the Global Goals. This

could involve fiscal systems becoming more progressive through putting less tax on labour income and more on pollution and underpriced resources.

- Creating the right regulatory conditions to attract private investment into sustainable infrastructure, which is most critical to achieving the Global Goals. The total estimated infrastructure investment needs across the global economy amount to \$90 trillion over the next 15 years. Aligning financial regulations with SDGs would enable long-term investment and reduce systemic risk by contributing to growth-boosting, much needed infrastructure and provide better returns for individual investors in a low-yield environment at the same time.
- Providing stronger incentives for long-term investing, including through blended finance instruments. Achieving the SDGs will likely require an estimated US\$2.4 trillion a year of additional investment. Unlocking this additional investment depends on orienting the global financial system towards long-term sustainable outcomes, with public and private sectors sharing both the risks and returns. There is enough capital available, given that total private financial assets stand at more than \$290 trillion and are growing by five percent a year. We need to take a fresh strategic look at how best to mobilize and deploy a smart mix of public and private capital to drive sustainable infrastructure investment. The Commission is therefore mobilizing a task-force of leading institutional investors, sovereign wealth

●● WE MUST HEAR THE REPORT’S MESSAGE LOUD AND CLEAR—AND INTEGRATE SDGS INTO ECONOMIC BUSINESS AND FINANCIAL MODELS ACROSS ALL SECTORS. WE MUST ALSO BE REALISTIC: IN ORDER FOR THIS NEW BLUEPRINT FOR BUSINESS TO REACH ITS FULL POTENTIAL, A GOOD DISRUPTION MUST TAKE PLACE. ●●

funds, development finance institutions, investment banks and private companies to lay out a “blended finance action plan” for the SDGs.

- Encouraging businesses to step-up their investments in developing the skills and productivity of their employees. Governments must deliver on the much needed labour and education policy shifts to address underlying systemic weaknesses. This will in turn enable business leaders to further invest to improve their employees’ productivity, skills, resilience, access to credit—and as far as possible, ensure that no one is left behind. This task is becoming ever more important, given the way that new technologies are creating structural changes in labour markets across the world.
- Stamping out corruption. As the drive for greater transparency regarding the beneficial ownership of anonymous companies is gaining momentum, it is imperative for regulators to tackle corruption more actively. The B20 group of business leaders have publicly called for greater transparency in beneficial ownership and estimated that the corruption facilitated by the status quo adds 10% to the costs of doing business globally. Such costs inevitably hinder the ability of the businesses to accelerate the alignment of their strategy with SDGs.

Business leaders who are serious about the transition to a sustainable economy can help push public regulation in the right direction, and scale up cooperation between the private sector and governments to achieve the SDGs. The next generation of purpose-driven economic growth is within our reach. So is the next era of purpose-driven competitive advantage. ■

Jeremy Oppenheim spent over 20 years at McKinsey, developing and leading its Sustainability and Resource Productivity Practice (SRP) from 2007-2015. He is Founding Partner of SystemIQ, a new firm dedicated to building sustainable, market-based economies, programme director of the Energy Transitions Commission, lead author of the Better Growth, Better Climate report of the New Climate Economy project, and advisor to multiple governments, companies and foundations on system transformation and resource productivity.



Global Security

Authored by: **Luke Waggoner and Eguiar Lizundia**

Is Systemic Corruption Driving Violent Extremism?

Public opinion research indicates corruption one of the foremost issues of concern to ordinary citizens, and trust in government institutions has reached an all-time low.





In recent years, high-profile corruption scandals have unleashed a wave of popular protests against politicians across the world. Public opinion research indicates corruption one of the foremost issues of concern to ordinary citizens, and trust in government institutions has reached an all-time low.

These negative views are often informed by personal experiences with bribery, nepotism and poor service delivery, which become rapidly less tolerable when the illicit enrichment of public officials dominates the news. Perceptions of pervasive corruption among the political class, in turn, makes constituents more vulnerable to the appeal of extremists who argue that the system is irretrievably broken, and only direct action can effect change. In Tunisia, for instance, violent extremist organizations have found a fertile recruitment base among marginalized groups who feel left behind by the country's embattled elected leaders and remnants of the authoritarian-era security apparatus.

The insidious connection between corruption and violent extremism operates in a feedback loop: as violent extremism rises, governments with questionable democratic credentials opt to maintain the status quo rather than undertake needed democratic and anti-corruption reforms, in the interest of shoring up state-level "stability."

While this may seem to deliver results in the short-term, in the long run it entrenches patron-client dynamics in the allocation of public resources that stoke popular resentment and enhance the appeal of direct action. For example, the governments of both Hungary and Turkey have exploited public anxieties over the influx of refugees and used the threat of terrorism to strip the government of important institutional checks, reflected in the sharp decline of each countries' rankings in Transparency International's Corruption Perception Index. >

●● AT THEIR CORE,
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Global Security

► The trend of consolidating power extends beyond corruption to the limitation of key democratic rights. Political dissent is sometimes conflated with unrelated extremism and used to justify repression and extrajudicial crackdowns on political opposition. In so doing, authoritarian leaders exploit the real threat of terrorism

to minimize political competition and undermine pluralism, and ironically enhance the appeal of extremism to disenfranchised segments of the population.

At their core, corruption and violent extremism must be understood as byproducts of bad governance—both on a local and national level. Research conducted by the

International Republican Institute (IRI) indicates that corruption is a key driver of terrorism in locations ranging from Bosnia to Tanzania to Tunisia. In addition, many of the factors traditionally thought to be tied to terrorism such as unemployment, political exclusion, and societal marginalization are related to corruption at some level.

In order to more comprehensively address both corruption and violent extremism, it is crucial that the international community redouble its efforts to strengthen democratic governance by increasing transparency and accountability; improving access to government officials and information; and bolstering service delivery.

In the development sector, this means employing approaches that address the nexus between corruption and extremism, rather than treat these phenomena in silos. In Ambon, Indonesia—an island that experienced years of sectarian conflict and remains vulnerable to extremism—IRI convened civil society representatives and government officials to implement interventions to combat corruption. By encouraging citizens to engage around a shared agenda that addresses commonly identified vulnerabilities to corruption, development partners can facilitate gradual governance reforms through sustained dialogue and collaboration.

As world leaders seek to fight corruption and counter violent extremism through mechanisms like the G20, it is essential that policies be developed holistically to undermine the dangerous feedback loop perpetuated by these challenges. Past experience has shown that piecemeal approaches are insufficient at rooting out the underlying causes of both corruption and violent extremism. By joining up anticorruption efforts with national counterterrorism strategies, leaders can undermine the recruitment by extremist organizations far more effectively. The upcoming G20 gives world leaders an important platform from which to address this critical linkage and forge a more thoughtful, thorough approach to both problems. ■

●● *IN ORDER TO MORE COMPREHENSIVELY ADDRESS BOTH CORRUPTION AND VIOLENT EXTREMISM, IT IS CRUCIAL THAT THE INTERNATIONAL COMMUNITY REDOUBLE ITS EFFORTS TO STRENGTHEN DEMOCRATIC GOVERNANCE BY INCREASING TRANSPARENCY AND ACCOUNTABILITY; IMPROVING ACCESS TO GOVERNMENT OFFICIALS AND INFORMATION; AND BOLSTERING SERVICE DELIVERY.* ●●



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SDGs

Authored by: **Erika Veberyte**

The Future of International Cooperation and Development in the Era of Globalization

The transnational nature of many problems calls for multilateral assistance to help the less fortunate and to ensure the security and wellbeing of our peoples.

With the post-Cold War era fading, discussions on levels of foreign assistance are focusing primarily on cutting budgets. No longer is its importance and successes the dominant narrative. In the face of new opportunities, such as technology which is providing interconnectivity, and immense

challenges offered by globalization, a growing number of world leaders are consumed with domestic problems in their backyards. Thus, they are withdrawing from multilateral organizations that have been the bedrock of security and cooperation for the past several decades. However, the transnational nature of many problems calls for multilateral assistance

to help the less fortunate and to ensure the security and wellbeing of our peoples. Historically, bilateral and multilateral cooperation via development aid has provided the soft power to conduct carrot and stick diplomacy that has advanced the stability of countries around the world. In the nineties, soft power was a central driver of profound

SUSTAINABLE DEVELOPMENT GOALS



●● *CONSIDER THE NETWORK OF ORGANIZATIONS AND INDIVIDUALS THAT CAME TOGETHER TO HELP SYRIAN WOMEN STRENGTHEN THEIR VOICE IN THE NEGOTIATIONS FOR THE FUTURE OF THEIR COUNTRY. LATE IN 2012, A SMALL GROUP OF INTERNATIONAL NGOS TURNED TO THE VERY FEW WOMEN NEGOTIATORS WITH A REQUEST TO HELP SYRIAN WOMEN STRENGTHEN THEIR VOICES IN THE DECISION-MAKING PROCESSES FOR SYRIA.* ●●

changes. After the fall of the Berlin Wall, it was instrumental in comprehensive and successful democratic reforms across the whole of Europe and parts of Eurasia. These reforms, in turn, impacted transformations leading to freedom and democracy in other regions of the world. Would these reforms have been possible were it not for the foreign assistance provided by the United States, the Great Britain, Germany, and other members of the international community? Would so many countries have become democracies, achieving membership in the European Union and NATO, were it not for the support and know-how shared by the non-governmental organizations (NGO) from these nations?

These are central questions we are grappling with in today's world. One in which a different distribution of power, via "my country first," are core political talking points in many nations. One where many more drivers of division rather than partnership are impacting global development. One in which more transactional interests and actions are potentially in play.

In response to these extraordinary challenges, the development community has been striving to continue finding ways to remain financially viable, efficient and impactful. The nature of this work and its constant need for a presence on the ground, have required of them to redefine their approach to security, reconsider their partnerships and adapt their operational structures. Local and international organizations, many have been innovative by finding avenues to act quickly, collaborate on common initiatives and enhance old and build new partnerships, which reflect today's world – the partnerships of local, regional, international, government, the private sector and non-governmental organizations. More importantly, these

partnerships do not expect immediate results and returns on their investment. They are willing to take short-term risks in order to impact long-term positive developments and be responsible world citizens.

Consider the network of organizations and individuals that came together to help Syrian women strengthen their voice in the negotiations for the future of their country. Late in 2012, a small group of international NGOs turned to the very few women negotiators with a request to help Syrian women strengthen their voices in the decision-making processes for Syria. This first dialogue included only a handful of Syrian women, but was so impactful that within a couple of months several governments and multilateral organizations, such as the governments of the United States, Sweden and the Netherlands, the UNWomen, many international and domestic NGOs and individual women leaders, offered their support to advance the cause of Syrian women. As a result, the Syrian Women's Network was launched in 2013 to ensure that women were included in the conflict resolution and transition processes of their country. Their efforts were refreshing because, among the growing distrust between different religious, ethnic and political groups, a diverse group of Syrian women were committed to ensure they are included in the conflict resolution and transition processes of their country.

Already in 2014, the members of the Syrian Women's Network were present during Geneva II negotiations. While their participation was only on the sidelines of negotiations, without formal processes of consultation, the presence of the Network itself offered an opportunity to have a collective voice of Syrian women during

this pivotal time in their country's history. Although the negotiations failed in 2014, to continue to amplify their voices during future negotiation processes, in 2015 the Network formed the Women's Advisory Board. As a result, to this day the UN Syria Envoy Staffan de Mistura consults the Women's Advisory Board, meeting with them separately from the official government and opposition delegations.

Because of the cooperation launched by a small group of international NGOs, Syrian women continue to make their voices heard. No one actor could have achieved what the coalition of international development organizations and multilateral institutions, governments, non-governmental organizations and experienced individuals had achieved through utilizing the soft power to advance the role of Syrian women in the negotiations about the future of Syria. Today, when our common values face the reality of growing nationalism, increasing security, humanitarian and environmental challenges, international cooperation and support for the development community is offering that soft power which grants a response to the challenges and opportunities of globalization. ■

Erika Veberyte has twenty years of experience in international relations and global development. She has served as national security adviser to the Speaker of Parliament and President of Lithuania during Lithuania's accession to the EU and NATO; as a senior Lithuanian diplomat in Washington, D.C.; most recently led the Women's Democracy Network.

Digital Economy

Authored by: **Bailey Piazza**

Indicators of Consumer Protection and Empowerment in the Digital World

The growth of the digital economy is severely hampered by barriers and fears.



There is no doubt about it: digitalization is transforming society. From the way we communicate with each other to the way we shop for clothes, a dependency on technology has increased innovation, choices, and competition. However, while this technological dependency holds a boon of future capability for the international community, over one half of the global population still does not have access to the internet. Of the many consumers who do use the Internet:

- 46% don't trust their governments to protect their rights online,
- 72% percent are concerned that too much of their data is being collected online, and
- 68% are worried their digital payments are unsafe.

The growth of the digital economy is severely hampered by these barriers and fears. When consumers are distrustful of businesses, consumers are discouraged to buy digital products and services. Both the consumer and the business lose and the digital economy suffers. Therefore, for the supply-demand equation to work, growth on the supply-side of the digital market is heavily contingent upon consumer trust on the demand-side of the digital market.

Being that the digital market is so critical internationally, governments around the world have been taking strides in promoting consumer protection and empowerment in the digital world. This global cooperation has been revitalized with the G20's Digital Economy Development and Cooperation Initiative, tasked with the following mission:

- To close the digital gap by expanding broadband access
- To improve the quality of the access
- To develop skills and competences relevant to the digital world
- To strengthen confidence and trust in the digital market

This initiative also calls for efforts to develop metric to study trust in the digital economy. As a result, a study was commissioned for the G20 Consumer Summit in Berlin on Wednesday 15 March (World Consumer Rights Day). The German Federal Ministry of Justice and Consumer Protection (BMJV), Consumers International (CI) and the German

Federation of German Consumer Organizations (vzbv) jointly organized the Summit, the first of its kind in the history of the G20. The objective of this study was to contribute to such development of better metrics. The result of the study is summarized in eight theses, concrete proposals for standardizing indicators that measure progress towards an environment that fosters consumer trust in the digital market.

1. Access to the Internet, information and communication technologies/services (ICT) and consumer trust in these products/services are all vital for comprehensive and successful digitalization process.
2. Privacy, data security, digital literacy have brought the demand-side of ICT into the public eye, holding the industry more accountable and encouraging increased trust.
3. The United Nations Guidelines for Consumer Protection (UNGCP) should be used as a policy framework to protect consumers digitally.
4. Quantitative means to measure and improve the digital consumer's protection and empowerment must be developed.
5. These indicators can be derived from UNGCP, which lists 65 indicators divided into 8 categories.
6. Indicators and data must be developed to fill in the gaps for economic interest, product safety/liability, and information transparency.
7. Simple representative consumer surveys can be used in the short-term to generate periodic data that can fill in these gaps.
8. Along with other initiatives, there needs to be an assessment that evaluates the consumer's protection and empowerment in the digital world for the long-term. A four-step procedure is offered:
 - Arrange a G20 group to agree on an overall framework.
 - An international organization should develop indicators and test methods.
 - The indicators already employed should be further studied and refined.
 - A G20 committee should approve a draft list of indicators and the institution should periodically collect data on the indicators. ■

To learn more about this study, which was commissioned by the Federation of German Consumer Organizations, visit: www.vzbv.de.

●● *WHEN CONSUMERS ARE DISTRUSTFUL OF BUSINESSES, CONSUMERS ARE DISCOURAGED TO BUY DIGITAL PRODUCTS AND SERVICES. BOTH THE CONSUMER AND THE BUSINESS LOSE AND THE DIGITAL ECONOMY SUFFERS.* ●●

Energy

Authored by: **Frank Maxwell**



Is Clean Coal the Answer to India's Energy Security Needs?

Is it really feasible for a country with such an abundance of coal reserves to turn its back on that cheap source of energy? As it turns out, not really.

Did India's new energy strategy – which promises to exceed its COP21 commitments by a whopping 50% – signal that the world's largest democracy is joining hands with conservationists and moving away from fossil fuels? Can this bastion of fossil fuels, where coal still accounts for 61% of its energy mix, kill the two birds of economic development and public health with one stone? That seemed to be the case, judging by the flurry of headlines that came out in December praising New Delhi's audacity. After all, this was a country that a little over a year ago

was locked in a high-profile struggle with the developed world over its reliance on fossil fuels.

Is it really feasible for a country with such an abundance of coal reserves to turn its back on that cheap source of energy? As it turns out, not really. Much of the media coverage was driven by hype and by wishful thinking that pushed some to believe that renewables are the only way towards protecting the planet from environmental disaster.

Which is why the second part of the story was grazed over by the media – that far from abandoning coal, India will look to ways to

improve the efficiency and reduce the carbon footprint of its coal-fired plants. Eleven GW of aging, inefficient plants will be replaced with new, supercritical technology, which comes fast on the heels of the roughly 33GW that were already converted over the last five years. This technology relies on boilers operating at higher temperature and pressure to generate steam and turn turbines more efficiently. What's more, 50GW of coal based power projects are currently in various stages of development and will come online before 2022.



In addition to these supercritical plants, India is also spearheading carbon capture and storage technology – a recent plant in Chennai showed that CCS is cost-competitive even without subsidies. The plant plans to capture 60,000t of CO₂ from a 10 MW power plant and turn the captured gas into soda ash that can be used as fertilizer. According to the company, the patented solvent they use can capture the gas at a cost of \$30 per ton. If these kinds of carbon neutral coal plants can be rolled out nation-wide, it would safeguard India's energy security while also working towards limiting CO₂ emissions.

What these developments show is that India's immediate challenge is not so much replacing fossil fuels with renewable sources of energy as is providing electricity to its 300 million, largely rural dwellers who still have no access to the grid. Earlier this year, Prime Minister Narendra Modi promised to bring electricity to all of India's villages by May 2018. This massive feat of rural electrification would mean bringing electricity to 200

villages a week for over a year. However, the plan stops short of promising electricity to every home – an important distinction, as proven by the 2011 census which showed that in villages categorized as having access to electricity only 55% of homes actually used it as their primary source of power.

The renewable revolution advocated by Modi comes with one major drawback: panels can only generate electricity during sunny, mid-day hours (roughly speaking, between 8am and 4pm). Since storing solar energy is a fairly expensive process, during evening hours – when power demand peaks – India will have to rely on coal power plants that are able to produce an equivalent amount of energy. What this means is that the capacity of thermal power plants can't fall behind solar – anything else would severely hamper the country's already fragile energy security. The national power grid is woefully inefficient and the country is often crippled by power shortages and blackouts like the one in 2012 where three of India's five grids

failed, leaving 20 of its 28 states and 700 million people without electricity for hours. Public services and private enterprises were forced to shut down as disgruntled citizens rioted in the streets.

All things considered, India will not abandon its thermal power plants and coal will very much stay an integral part of the country's energy mix. This shouldn't be construed as a bad thing – major technological leaps such as supercritical plants and CCS are the only elements that can solve India's development dilemma and do so without raising the country's CO₂ footprint. ■

Frank Maxwell has almost two decades of experience working in Central and Eastern Europe and is currently a Competitive Intelligence Correspondent based in Warsaw.

China

Authored by: **Bailey Piazza**

Shaping a Rising China's Place in the Interconnected World

China's increasing development and rising assertiveness has brought the international community to the edge of their seats waiting to see how America will respond next: with cooperation or conflict.



Since the end of the Cold War, China, as well as much of East Asia, experienced large strides in political, economic, and cultural growth. China's increasing development and rising assertiveness has brought the international community to the edge of their seats waiting to see how America will respond next: with cooperation or conflict. The mission of the 2017 G20 conference calls all countries to pursue mutual interdependencies, but China's rise as a global power and growing economic presence has resulted in a palpable rise in Beijing's ambitious interests that foster severe tensions with other Asian countries as well as a hegemonic relationship with the United States. Based on China's impactful history, international relations, and domestic politics, and economic feats, U.S. policymakers should be wary that conflict with China

is possible but certainly not inevitable.

Economic revolution and industrialization was slow to hit China compared to other "dragons," or developing East Asian countries, like Japan, South Korea, and Singapore. Eventually, modernization took root, generating rapid transformation in approximately sixty years. China and the East Asia region stood out from other emerging countries by developing at a rate of 10% growth/year, compared to the 3% growth in Latin America, for example. Much of China's economic growth can be attributed to its pivot towards free market principles. According to Warren Cohen, the greatest move Beijing made was the decision in the late 1970s "to abandon self-reliance and to seek the rapid modernization of their industry through increased contact with the outside world."

Under Deng Xiaoping, credited with being

the greatest advocate of opening China to the world, China began accepting foreign loans, aid, and various international investments. Other countries, particularly the West, were eager to explore China's vast market and invest in industries that would benefit from China's massive low-wage, nonunionized workforce. At this point in China, many citizens recognized the new structure of government and economy, perceived new flexibility, and desired not only wages but also skills and careers. As a result, people from all over China accepted industrial jobs, spurring Chinese production and technological advancement. With the large labor force and international exposure, China became a leading export industry with the United States as its principle market, despite tensions over Taiwan. Ultimately, this switch to export-led growth contributed to China's rapid development by concentrating on developing domestic export industries capable of competing in overseas market.

Coupling with China's economic rise is China's climbing ambition. As evinced in Beijing's recent maneuvers in the South China Sea (including China's maritime construction activity on seven new artificial islands and an increased military presence on the Sea and on the coast), China is certainly not as timid in pursuing its national interests as it was once before. This is largely attributed to historical and cultural factors that pervade Chinese logic and strategy planning today. A major impact on this ideology is the Century of Humiliation, which refers to the period of intervention and imperialism by Western powers and Japan in China. This Century of Humiliation began in the mid-19th century with that start of the First Opium War and continued to include other weakening and demoralizing catastrophes, including unequal treaties, a Second Opium War, the Sino-Japanese Wars, and, arguably, the Korean War. While an exact end to China's "humiliation" is vaguely defined, China is fueled by their shameful past and often refers to this period as a nationalistic method to validate and legitimize China's right to defend its sovereignty and regain its position as a world power through particularly bold and assertive behavior.

With this recent ambitious character in mind, one must consider to what point will Beijing flex its muscles to get what it wants and—as far as Xi Jing Ping is concerned—deserves. Policymakers in America are confronted with the reality of engaging in

conflict with China. One option in dealing with a rivaling power to the United States is to decidedly not forcing them to be a rival. Instead, the U.S. could mold China into the ranks of being a world power alongside America, Britain, etc. According to Aaron Friedberg however, accepting China as an equal participant in maintaining world order and thus generating a multipolar global system would be catastrophic. Multiple centers of power, especially fundamentally different sources of power as in the case of China and the U.S./other Western nations, would induce a complexity that would make slow progress in confronting even shared threats. Such miscalculations will and have contributed to war.

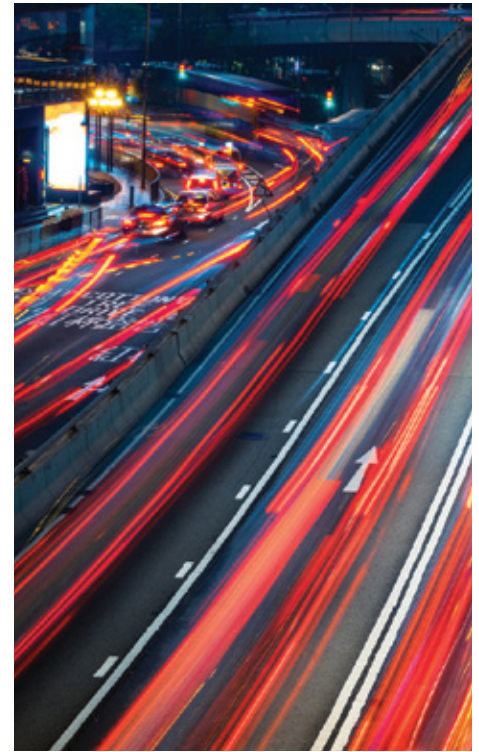
Policy makers should also be cautious of what lies within the belly of the Chinese dragon. China's tumultuous past has made those in leadership in Beijing exceptionally fearful of instability. Ironically, that fear and constant maintenance of stability has spawned recklessness in their own hands. According to Susan Shirk, the desire to please the Chinese people has encouraged rash decisions and policymaking without consideration for larger, international consequences. In addition, China has exhibited a proclivity for showing two faces of Chinese power: 1) cautious and responsible in order to promote growth and stability and 2) aggressively risky and nationalistic for the sake of defending China's national honor. Should China become a dominant world power in the future, today's world must be on constant alert for what sudden policy changes and actions it commits. Such rash decisions will have monumental consequences as China continues its rise, spurring instability with more instability: the perfect incubation environment for disastrous results.

While conflict is possible with China, U.S. policymakers should note that war is not inevitable. China's rise cannot be ignored; therefore, the United States must react and plan a long-term strategy to peacefully incorporate China into an environment that allows it to make vital decisions. As mentioned before, China's domestic instability is of major concern. In order to combat that unpredictability, the U.S., along with its allies, must create a Western order that is inclusive and institutionalized. This will help ensure that if (or when) the U.S. loses dominance, China will wield its power within the confinements of rules and institutions that the United States

and its partners have created, preserving the interests of all nations in the future.

Many of these institutions are already in place. For example, China is currently a member of The International Monetary Fund and World Trade Organization. The rules and regulations not only keep China in check but also are a tremendous benefit to China's economic and trade relations. Echoing John Ikenberry's theory, liberalization and a liberal world order is key for China's continue growth. Entering in war with the U.S. or otherwise engaging in conflict will have a far greater ripple effect, damaging the economy of China as well as the rest of the world. This is a salient point in predicting the likelihood of Chinese aggression. On the other hand, while China seems to be engaging relatively smoothly within the Western system, China has made strides in creating its own Asian order with organizations like ASEAN and ASEAN + 3. By establishing institutions without U.S. involvement, China creates the appearance of increasing its participation in international organizations while also formulating its own exclusive sources of trade and alliance in Asia. While this might be of some concern considering these institutions were not pre-ordained by the U.S., the countries involved in such organizations also have a heavy dependency on the West and are unlikely to act contrary to the agreements from which they benefit.

Ultimately, the factors attributing to China's rise as a global power are largely economic and political. China's transformation into an industrialized society was the result of export-led growth that made China's products available all over the world. Free market principles and policies combined with a large workforce revved up China's economy and political ability to rise to the power pedestal it relishes today. Stemming from China's confidence in its economic prowess is its rising ambition to pursue national interests, domestically and abroad. With the ghost of a traumatizing past still haunting Chinese society, Beijing seeks to legitimize its authority and secure its right to be a global power. Lastly, when determining how the U.S. should respond to China's rise, it is necessary to know that while conflict is possible, it is not inevitable. China's fear of instability, intense nationalism, and tendency for rash decisions make China's apt for conflict with the U.S. However, measures can be made today to ensure that when China reaches their goal of global dominance, the Western



●● *UNDER DENG XIAO PING, CREDITED WITH BEING THE GREATEST ADVOCATE OF OPENING CHINA TO THE WORLD, CHINA BEGAN ACCEPTING FOREIGN LOANS, AID, AND VARIOUS INTERNATIONAL INVESTMENTS.* ●●

world order has created a system that institutionalizes the interests of all nations involved, keeping China open to those interests while shaping an interconnected world. These institutions are and will be a great advantage for China, which has benefitted from the economic trials and growth from free trade, aid, etc. Whether we determine a rising China to be friend or foe is ultimately up to the policy decisions we make today, forging a place for China in a new, peaceful, and cooperative world order. ■

Bailey Piazza is Diplomatic Courier magazine's Washington, DC-based Correspondent.

The Caucasus

Authored by: **Justin Leopold-Cohen**

Tracing Knots: Tangled Alliances in the Tinderbox Known as the Caucasus

In 1796, President George Washington said the United States ought to avoid entanglement in affairs that don't involve America. But should that be the case today?

In 1796, President George Washington delivered his farewell address, a goodbye to public service, which also included his advice on how the fledgling nation ought to progress to assure continued peace and prosperity. One of the more noteworthy clauses of that address was that the United States ought to “steer clear of permanent alliances with any portion of the foreign world,” to avoid entanglement in affairs that don't involve America.

Over a century later, in 1918, at the conclusion of the First World War, President Woodrow Wilson delivered the Fourteen Points detailing how the entire international community ought to proceed, to avoid a return to such devastation. First among the points was his call for “open covenants of peace,” putting an end to secret dealings and alliances so that diplomatic relations would “proceed always frankly and in the public view.”

Since Wilson's early 20th Century warning, nearly another full century has passed—one that finds the United States and the world at large as entangled as ever. One of the more confusing regions to navigate is the Caucasus,

located “between the Black Sea (west) and the Caspian Sea (east) and occupied by Russia, Georgia, Azerbaijan, and Armenia,” with Turkey, Iran, and several Middle Eastern States just to the South.

While this collection of nations has had no shortage of internal and external disputes, an old grudge has been resurfacing between “Armenia and Azerbaijan, and as this year progresses, chances of a resumption of hostilities between the two countries will remain high.” The two states have been disputing rights to a territory known as the Nagorno-Karabakh, and indeed, fought a war over that very area from 1988-1994. The conflict has its “roots dating back well over a century into competition between Christian Armenia” and Muslim Azerbaijan.

At first glance, this may appear to be just another territorial dispute—which the world certainly has in abundance. However, when factoring in the other states and the alliances involved, this specific territorial dispute could have global consequences.

Formerly the Soviet protector to the whole region, the modern Russian Federation has

quite a large stake in this particular dispute. At the conclusion of the 1988-94 War, it was the Russians who initiated the truce, and today it is still widely believed that the > > Russians are the only ones with enough regional clout to keep tensions cool. One previous idea entertained by Russia (and which is thought to still be in discussion) is the Lavrov Plan. However, it's one to which Armenia is hostile to, as it calls for them to “cede five of its seven regions surrounding Nagorno-Karabakh to Azerbaijan in exchange for a peacekeeping force led by Russia.”

Armenia is not the only country in the region to find itself opposing Russia. In 2008, Russia engaged in a 5-day military conflict with Georgia, which ended in Russia's withdrawal, along with condemnation from the United States, and an investigation by the International Criminal Court for War Crimes. In addition to this past military faceoff, Georgia has continued to find itself in tricky economic deals, given the hostilities between the other Caucasus states, and soon, may have to come down officially for one side over another.

Russia still easily outmatches these two smaller nations in military might and political influence; but here enters Iran. The Orthodox Christian Armenia and the Islamic fundamentalist Iran—though seemingly odd bedfellows—have found themselves paired by geopolitical forces. Iran has not only been at odds with Russia for regional influence, but has its historic rivalry with Turkey, and “strained relations with Azerbaijan over that country's rejection of an Islamic order.” Thus, reaching out to Armenia made sense, and Armenia has been happy to accept their friendship ever since.

Perhaps most clear, are the hostilities between Armenia and Turkey. This attitude is easily understood in light of Turkey's resentment towards its former Ottoman subjects, and Armenia's pursuit of “recognition of the 1915 killings as genocide”—a claim much of the world has failed to recognize, including the United States, but not Russia and 25 other nations.

Most of the refusal to acknowledge the Armenian Genocide comes from Turkey's importance in geopolitics. In fact, hostility towards Turkey is an issue on which Russia and Armenia have found common ground in the past—a mutual feeling that even saw thousands of Russian troops housed in Armenia at two Russian military bases as a deterrent—a move that upset some of

●● AT FIRST GLANCE, THIS MAY APPEAR TO BE JUST ANOTHER TERRITORIAL DISPUTE—WHICH THE WORLD CERTAINLY HAS IN ABUNDANCE. HOWEVER, WHEN FACTORING IN THE OTHER STATES AND THE ALLIANCES INVOLVED, THIS SPECIFIC TERRITORIAL DISPUTE COULD HAVE GLOBAL CONSEQUENCES. ●●



Turkey’s allies, along with Armenian supporters such as the United States.

The United States is not the only distant ally that has seen itself pulled into this tinderbox of religious, ethnic, and territorial disputes. In the midst of the Iranian conflicts with Azerbaijan, the more secular Muslim Azeris found an ally in Iran’s most hated enemy: the Israel. For Azerbaijan, a friendship with Israel not only gives them an ally against Iran, but also a sophisticated military trading partner to leverage against Russian arms sales in the region. In turn, for Israel, having any ally is beneficial, but especially a Muslim nation that shares a border with Iran.

This arrangement has its drawbacks for Armenian-Israeli ties, however. Israeli Jews and Armenians have long been thought to be kindred spirits due to their mutual historical traumas. As well, a large number of Armenians reside comfortably in Israel. But due to Israel’s political need to retain positive ties with Turkey, and its opposition to Iran, it’s unclear if good relations can persist with Armenia.

While Wilson sought to amend Washington’s warnings concerning no permanent alliances, it is clear that such avoidance of secret alliances has not made the world any more stable. In this small territorial conflict in this Eurasian region, players near and far have been dragged into the game, and if tensions between Armenia and Azerbaijan continue to rise, this tinderbox could very well cease to merely smolder, but burst into flame.

If the multitude of relationships is still unclear, please refer to the below Caucasus Friendship Chart*, inspired by the “Middle East Friendship Chart,” by Joshua Keating and Chris Kirk. ■

Disclaimer: The views and opinions expressed in this article are solely those of the author and do not represent the views of the U.S. government, or any other government or institution.

Justin Leopold-Cohen completed his undergraduate degree in American History from Clark University. He later interned with the Hudson Institute’s Center for Political and Military Analysis, and now is involved in graduate studies at Johns Hopkins University, nearing the completion of a Master’s Degree in Global Security Studies.

Middle East Friendship Chart

	Syrian Government	Syrian Rebels	ISIS	Jabhat al-Nusra	Kurds	U.S. and Allies	Iraq	Iran and Hezbollah	Russia	Saudi Arabia, Gulf States	Turkey
Syrian Government	Grey	Red	Red	Red	Yellow	Red	Green	Green	Green	Red	Red
Syrian Rebels	Red	Grey	Red	Yellow	Yellow	Green	Red	Red	Red	Green	Green
ISIS	Red	Red	Grey	Red	Red	Red	Red	Red	Red	Red	Red
Jabhat al-Nusra	Red	Yellow	Red	Grey	Red	Red	Red	Red	Red	Yellow	Yellow
Kurds	Yellow	Yellow	Red	Red	Grey	Green	Red	Green	Green	Yellow	Red
U.S. and Allies	Red	Green	Red	Red	Green	Grey	Green	Yellow	Yellow	Green	Green
Iraq	Green	Red	Red	Red	Red	Green	Grey	Green	Green	Yellow	Yellow
Iran and Hezbollah	Green	Red	Red	Red	Green	Yellow	Green	Grey	Green	Red	Yellow
Russia	Green	Red	Red	Red	Green	Yellow	Green	Green	Grey	Red	Red
Saudi Arabia, Gulf States	Red	Green	Red	Yellow	Yellow	Green	Yellow	Red	Red	Grey	Green
Turkey	Red	Green	Red	Yellow	Red	Green	Yellow	Yellow	Red	Green	Grey

Legend: ● Friends ● Enemies ● It's complicated

IOT

Authored by: **Julie Kantor and A. Crosser**

Get Ready: What You Need to Know About the Internet of Things

Today's devices make up only 0.1 percent of all new innovations expected to connect to the internet. Our lives are going to change significantly as this sector grows exponentially.

I was talking with my good friend Sheryl Sleevea and discussing that there will be a day in the not so distant future where your refrigerator will re-order food for you automatically. Out of Honest Tea and So Delicious dairy free ice cream? No worries, it arrives in less than three hours. At 4pm, your thermostat goes from 65 to 72 degrees. Your home, lightbulbs and all appliances will be getting ready to welcome you when you return from work.

Often referred to as the Internet of Things (IoT) or the Internet of Everything (IoE), our many interconnected devices create a massive online infrastructure many of us use throughout our daily lives. Our smartphones, tablets, laptops, and even refrigerators make up the Internet of Things. In fact, any device which is connected to the internet makes up the Internet of Things.

The Internet of Things has grown into a powerful shaping force for both our personal and professional lives. Throughout the past two decades, technological innovation has changed the face of humanity unlike any other period in history, and the sector continues to expand and re-shape how we see entertainment and business.



The History of the Internet of Things

Despite the growing impact of the Internet of Things, nearly 87 percent of individuals have never heard the term. Most people are connected to the Internet of Things in some way, but few have any idea as to how the system impacts their day-to-day life - both in the office and in the home. It seems like a

concept for those tech-y people and engineers out on the West Coast.

The Internet of Things may sound like a new term, but in actuality it's been around since 1974, when Automated Teller Machines (ATMs) took their place as the first member of the IoT. Since then, this network of interconnected devices has grown



exponentially - in 2008, the number of devices in the IoT surpassed the number of people in the world.

What Makes Up the Internet of Things?

Currently, there are roughly 5 billion devices connected to the internet. This number is expected to reach 50 billion by the year 2020,

●● *THE INTERNET OF THINGS HAS GROWN INTO A POWERFUL SHAPING FORCE FOR BOTH OUR PERSONAL AND PROFESSIONAL LIVES. THROUGHOUT THE PAST TWO DECADES, TECHNOLOGICAL INNOVATION HAS CHANGED THE FACE OF HUMANITY UNLIKE ANY OTHER PERIOD IN HISTORY, AND THE SECTOR CONTINUES TO EXPAND AND RE-SHAPE HOW WE SEE ENTERTAINMENT AND BUSINESS.* ●●

and will include hundreds of new devices. Today's most common devices include smartphones, tablets, and computers, but newly designed refrigerators, thermostats, and even light bulbs are beginning to take their place in the Internet of Things.

Self-Driving Cars

Among the most interesting of these newly developed, interconnected devices is the self-driving car. Experts predict we'll see over 250 million cars connected to the internet by the year 2020, and many of these will be self-driving. While self-driving cars are still in their early stages of development, companies like Google are logging over 10,000 miles per week with their fleet of fully autonomous vehicles. It will take a number of years for self-driving cars to become a staple of garages everywhere, but as they become more mainstream and more readily available, they'll become an important addition to the Internet of Things.

Wearable Technology

While the invention of self-driving cars is enough to excite the inner sci-fi enthusiast in all of us, the development of smaller devices will also have a major impact on our lives in

the coming years. Over the past five years, the development of wearable technology has grown into an established market, with smart watches and FitBits becoming an important addition to many of our wardrobes. In fact, the wearable device market grew 223 percent in 2015, with millions of FitBits and Apple Watches being shipped shortly after their release. These devices are still fairly new to many members of today's society, but they form an important sector of the Internet of Things. Wearable technology is expected to pave the way for new innovation, wherein devices like smartphones and tablets become a thing of the past. When I bought the Apple watch last April, my friend Dan said "Julie, now your devices have devices." I was sitting at the table and my purse was in the other room. The phone rang on my iPhone and on my watch I could see it was my daughter calling, so I answered my watch at the table.

Smart Clothing

As of now, wearable technology is confined to watches, FitBits, and Google Glass, but internet-connected clothing is currently in development. Experts expect roughly 10.2 million units of smart clothing will hit shelves in 2020, such as fitness-tracking shirts >



› which are designed to monitor the wearer's heart rate, body temperature, and other vital signs. Just ten years ago, smart clothing would have sounded like a work of fiction devised in an episode of Star Trek: The Next Generation, but as of 2013 over 140,000 units of smart clothing were shipped worldwide.

How the Internet of Things Impacts Our Shared Economy

The Internet of Things plays an important role in our personal lives by giving us new ways to learn, work, travel, exercise, communicate,

●● *THE INTERNET OF THINGS IS ONLY GOING TO GROW, AND IT'S GOING TO HAVE AN UTTERLY MAJOR IMPACT ON THE PEOPLE AND ECONOMIES OF THE GLOBE.* ●●

and entertain ourselves, but it also plays a massive role in the world's shared economy. As the internet grows, economies of the world become increasingly connected. This has a major impact on jobs and trade, as well as the world's GDP - in fact, GE recently stated that the Internet of Things (or the "Industrial Internet," in their terms) will add between \$10 trillion and \$15 trillion to the global GDP over the next two decades. In addition, the McKinsey Global Institute believes the Internet of Things will have a total economic impact of roughly \$11 trillion by the year 2025. These estimations show that as people of the world become more connected because of the IoT, so do their economies.

The Internet of Things is only going to grow, and it's going to have an utterly major impact on the people and economies of the globe. Today's devices make up only 0.1 percent of all new innovations expected to connect to the internet, meaning our lives are going to change significantly as this technological sector grows exponentially.

The devices we currently use have had a significant impact on how we work and relax, but the devices we can expect to see throughout the next 20 years have immeasurable potential for the people and economies of the world. Technological innovation holds limitless opportunity for society and business worldwide, making the Internet of Things one of the most innovative new factors of modern life. ■

Julie Silard Kantor is CEO of Twomentor, LLC a social impact company dedicated to helping companies retain Millennials and elevate women in STEM fields through mentor training and strategy. She has Chaired the Global Women in STEM Conference in Dubai October 25-26th through the Meera Kaul Foundation and recently presented a speech to 350 Millennials from 85 countries at the United Nations through World Merit360.

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Technology

Authored by: **Caroline Holmund**

Learning from the Luddites: Harnessing Modern Tech for Good

As menial, long-hours-for-low-pay jobs have become mechanized, people have moved on to occupy higher paying jobs that allow for more free time and disposable income to spend on well-being.

Donald Trump has been lauded for keeping his promise to workers at air-conditioner manufacturer Carrier, keeping at least 800 jobs from going to Mexico via direct intervention. In many ways, Trump's approach encapsulated the policies he advocated on the campaign trail: cutting regulations and slashing corporate taxes to bring manufacturing jobs back to America.

Unfortunately for Trump, that strategy fails to address the underlying shift driving job displacement across the planet: roboticization. Trump's proposals are, in fact, another example of policymakers offering analog solutions to the problems of the digital age.

The disruptive role of technology in labor markets has been a constant feature of our modern world, dating back to when workers in 19th-century England smashed up weaving machines whose speed and efficiency put them out of work. Even with the hardship caused to those who lost their jobs, few would argue that society is not materially better off 200 years later. This is the same point a now-famous Deloitte study made last year: although technology has destroyed jobs over the past 140 years, it has created even more.

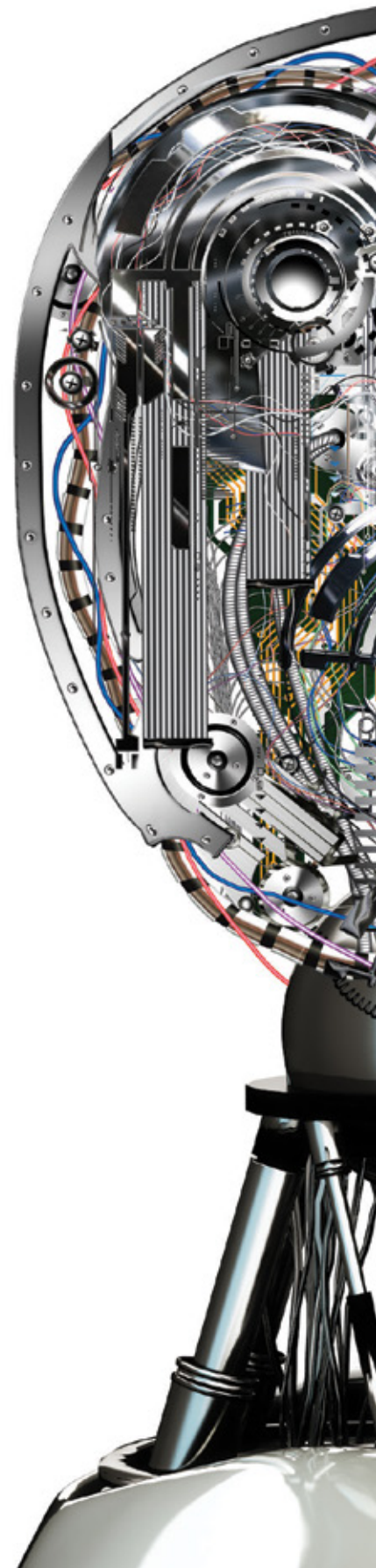
The kinds of jobs destroyed and created machines also tell a story about how quality of life has progressively improved as technology has advanced. As menial, long-hours-for-low-pay jobs have become mechanized, people have moved on to occupy higher paying jobs that allow for more free time and disposable income to spend on

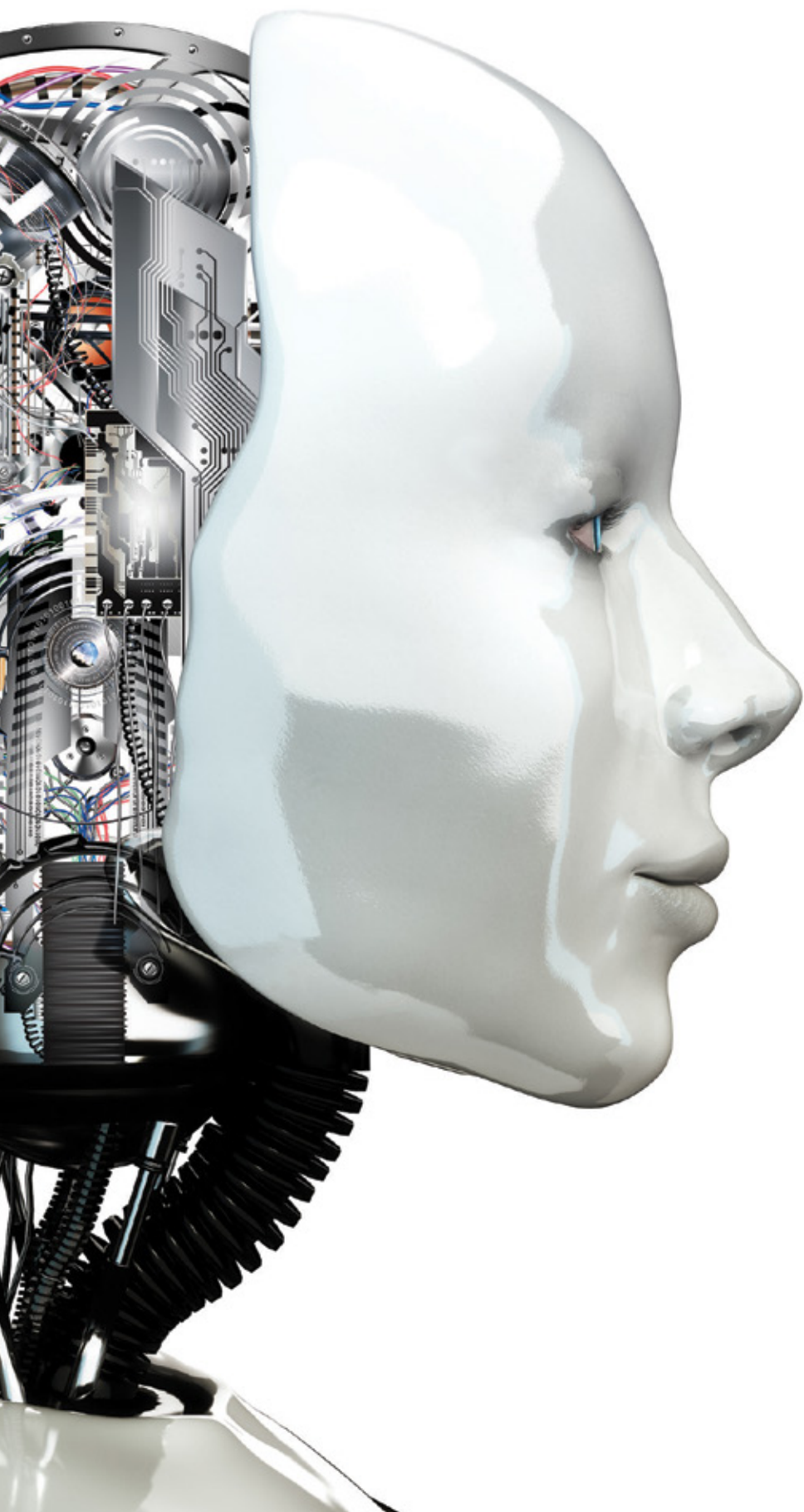
things like fitness classes and self-grooming, two sectors that have seen explosive growth over the last few decades. Not that these were the only industries to grow substantially: in the UK alone, the two decades between 1992 and 2014 saw 580% growth in teaching and education.

Like any change, there have always been winners and losers in this process and populist leaders willing to exploit their frustration. Unfortunately for those affected, Trump-style protectionism does nothing to halt the march of technology. Many of the jobs Trump wants to bring back from China are not even being done by Chinese workers at this point, or at least not human ones: China is fast becoming one of the world's largest importers of industrial robots, whose prices have fallen so much that they now undercut human workers.

The ramifications of this so-called third industrial revolution reach into every sector of the economy and society. Take energy production: after years of actively denying the existence of climate change while benefitting heavily from government subsidies, fossil fuel companies are now radically reorienting themselves to catch the crest of the renewable energy wave. Industry giants like Shell, Statoil, and Exxon have recognized that the markets for their core products are shrinking and are investing billions into developing green energy to ensure their own survival.

While the common narrative is that this shift will cost fossil industry workers jobs, a growing body of evidence suggests this doesn't have to be the case. Researchers at Oregon State University found growing >





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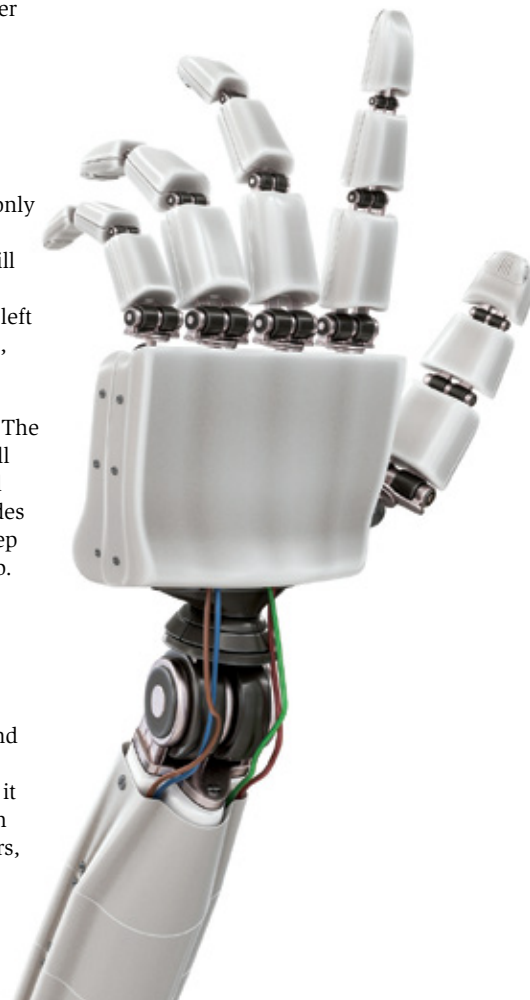
Technology



●● *DONALD TRUMP IS HARDLY ALONE IN BEING LEFT BEHIND BY TECHNOLOGY, OF COURSE. FOR YEARS, POLICYMAKERS HAVE BEEN RESORTING TO BLUNT AND OUTDATED POLICY TOOLS TO COME TO GRIPS WITH THE EXPLOSION OF "SHARING ECONOMY."* ●●

› employment in the solar industry could easily make up for jobs lost in coal over the next decade and a half. Their study notes that the solar industry is growing 12 times faster than the rest of the economy and already employs more than 208,000 workers, as opposed to the 150,000 employed in the coal industry. With the right training, the vast majority of those coal workers could transition to solar and see a marked wage increase in the process. Interestingly, the only people that would make less in this grand transition would be the executives who will now be writing American energy policy.

Donald Trump is hardly alone in being left behind by technology, of course. For years, policymakers have been resorting to blunt and outdated policy tools to come to grips with the explosion of "sharing economy." The apps we now use to book lodgings and call for rides have upended the hospitality and taxi industries, and lawmakers on both sides of the Atlantic have been scrambling to keep pace with companies like Uber and Airbnb. While these new companies and their competitors enjoy breakneck growth, the policy response has been flatfooted and largely beholden to the interests of the traditional industries now being replaced. None of this benefits consumers, who stand to gain considerably from the sharing revolution and the newfound accessibility it brings. These new services also provide an outlet for thousands of micro-entrepreneurs, who use the platforms as vectors to create their own businesses.




Unsurprisingly, regulators are also having a hard time with the advent of tech-driven consumer products. E-cigarettes are one prominent example. Doctors in the UK have embraced the electronic devices as a tool for quitting smoking, but the American Surgeon-General has come out rubbishing those potential benefits and the global Framework Convention on Tobacco Control, or FCTC, used its most recent conference in New Delhi to insist that governments treat e-cigarettes as just another form of tobacco. What's more, FCTC participants voted unanimously to ban all journalists from assisting in the event, thereby imposing a media blackout on the proceedings. This is an unfortunate trend: increased awareness among consumers about the dangers of cigarettes has forced the market to adapt, and e-cigarettes allow the world's billion or so smokers to manage their nicotine habit in a way that is 95% less harmful. That might be why the big tobacco companies, like the fossil fuel giants, are considering giving up their flagship products entirely.

None of this is to say it's impossible to come up with an effective regulatory framework to govern new technologies. What we should expect from lawmakers is realism: no law can forcibly bring the coal industry back to life, or conjure non-existent manufacturing jobs in the American heartland when a robot can do the same job more quickly and cost-effectively. Technological advances have always come with costs and benefits, and it is our job to minimize the former while harnessing the full potential of the latter. ■



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IOT

Authored by: **David Clemens**

Change your Wi-Fi Password NOW!

Assessing Tomorrow's IoT Risks

Effective security will remain as one of the main roadblocks in the implementation of IoT technology unless developers can address new risks.

On October 21, 2016 the United States was hit with a massive DDOS attack that knocked out several websites for hours in the early morning. Disrupted denial of service attacks (DDOS) flood and overload servers with fake requests to disrupt online services for Americans and their companies. In this attack, security experts report that Mirai, a software program, was used to infect technology ranging from DVRs, to routers and even internet connected cameras. Mirai accessed these devices through malware from phishing emails, a process in which hackers send emails disguised as legitimate businesses in an attempt to gain access to one's information. This method is new and unique because, unlike a traditional network breach, the hackers took control over insecure devices by using simple methods, like searching for open networks and devices that still use factory-default passwords. The most troubling element of this attack is that Mirai's open sourced code was recently made available on the internet.

Today, Internet of Things (IoT) devices allow for hackers to conduct attacks at a reduced cost to what was previously possible. Looking forward, effective security will remain as one of the main roadblocks in the implementation of IoT technology unless developers can address this problem.

Hacking IoT Devices

The two main methods that can be used to hack into IoT devices come from the software and hardware part of the device. On the hardware side of the device, external control can be attached to a processor and enable external control of the system. This

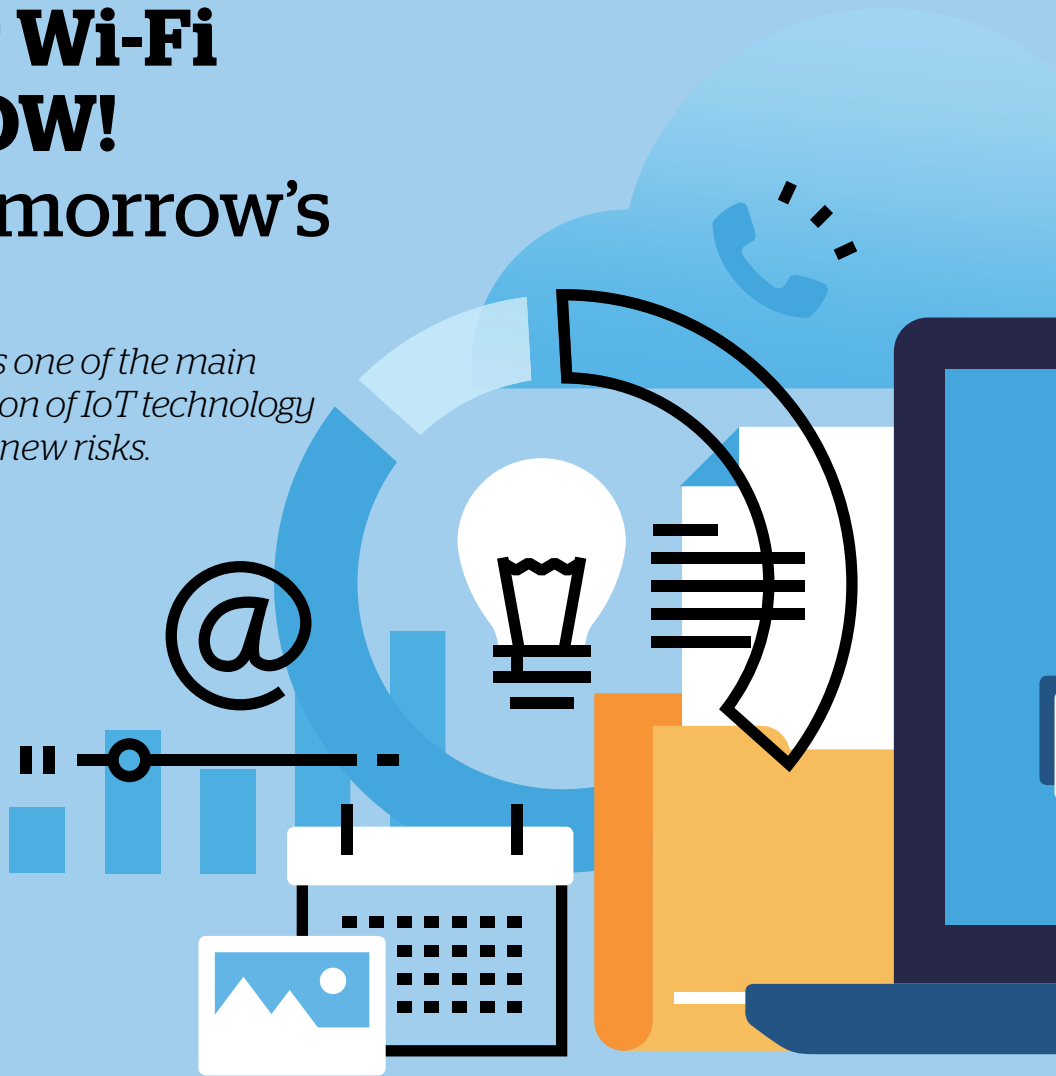
technology has been around since 1990 and is commonly referred to as the JTAG methodology. For IoT devices, the challenge with hardware will come from whether or not the device can authenticate if the user has the rights to debug parts of the system or if it is a hacker trying to gain access to the execution of code in the processor line by line. In layman's terms, imagine owning a jump drive, which when plugged in, convinced the computer that the jump drive is part of the machine, and thus is given access to its internal workings.

On the software side, the greatest issue in addressing hacking into IoT technology comes from the ability to access the rest of the network. The idea of containers allows a user to access certain key parts of a devices

infrastructure (the kernel of a system). As the number of devices increases so does the difficulty in applying security updates. Think of the differences between a webpage viewable to everyone compared to the developer page that contains additional commands. Currently, devices cannot prevent hackers from accessing all of the commands.

Difficulty in Implementing IoT Security Systems

Security services have developed alongside other Internet technology. Since IoT devices are a new way to allow for internet connectivity, these new variables throw a monkey wrench in the traditional method of closed operation cyber-security which





keeps the security elements on a closed loop. Systems such as CCTV cameras, when fitted with IoT devices, have a greater chance at becoming compromised. Even though IoT technology implementation is limited now, in the future when it is expanded to other sectors it can carry much greater security risks. These types of devices are difficult when control systems are attached to infrastructure. Nuclear power plants, banking, and autonomous vehicles are all at risk if effective security protocols are not made at the founding level. Implementing patches or security updates is difficult because the function and safety must not be compromised in the process.

Embedded devices such as GPS receivers or mp3 players, while convenient, are

difficult for developing security for, because of their low power consumption and limited connectivity. Many times, the devices have to make decisions about whether to accept a command or execute a task without immediate human control. Also, IoT chips will not be big money-makers since these are tiny and usually based on outdated architectures. The cost in this instance actually can work against more current architectures, since the low cost makes it difficult to reconcile use when compared to increasing the security profile. If a vulnerability is discovered, then it is difficult to fix because it would be more cost effective to buy new devices, thus continuing the security dilemma. >

🔗🔗 ON THE SOFTWARE SIDE, THE GREATEST ISSUE IN ADDRESSING HACKING INTO IOT TECHNOLOGY COMES FROM THE ABILITY TO ACCESS THE REST OF THE NETWORK. 🔗🔗



●● *EMBEDDED DEVICES SUCH AS GPS RECEIVERS OR MP3 PLAYERS, WHILE CONVENIENT, ARE DIFFICULT FOR DEVELOPING SECURITY FOR, BECAUSE OF THEIR LOW POWER CONSUMPTION AND LIMITED CONNECTIVITY. MANY TIMES, THE DEVICES HAVE TO MAKE DECISIONS ABOUT WHETHER TO ACCEPT A COMMAND OR EXECUTE A TASK WITHOUT IMMEDIATE HUMAN CONTROL.* ●●

► Possible Solutions

The current methods used for security can be retrofitted right now for IoT devices, but true security innovations will have to be built from the ground up. The confidentiality of data will remain a top priority for both businesses and consumers, and nowhere is IoT security more important than in the security of data in motion between devices. Current controls such as using a VPN or physical encryption methods such as 802.11i (WPA2) and 802.1AE (MACsec) offer additional protection, with most devices in the future will run in Internet Protocol version 6 (IPv6). IPv6 allows for 128 bits instead of the limited 32 bits of IPv4, multiplying the amount of

address space which creates a security barrier against port scanning.

To avoid these related issues, security cannot be an add-on to a device, but instead must start at the hardware level, to which software security controls can be introduced on the operating system level. The current methods of using closed, proprietary systems trade ease of use for increased security measures and will be ineffective in the future.

While there is no “perfect solution” right now for IoT security, the current methods can be adapted to provide greater protection for IoT devices. Adapters of IoT need to stay weary of the tradeoffs between cost, security, and reliability. Once more smart technology is

in the marketplace, industry and government will have to make the decision of whether or not IoT systems are the most cost effective method to achieve the standards required. Once this problem is solved, society can then begin to use IoT on a city, or even nationwide scale. ■

Editor's Note: Experts recommend that Wi-Fi passwords should be changed every 60-90 days, keeping them set on default will only continue to allow them to get hacked.

David Clemens is a Contributor to Diplomatic Courier Magazine in Washington, DC.

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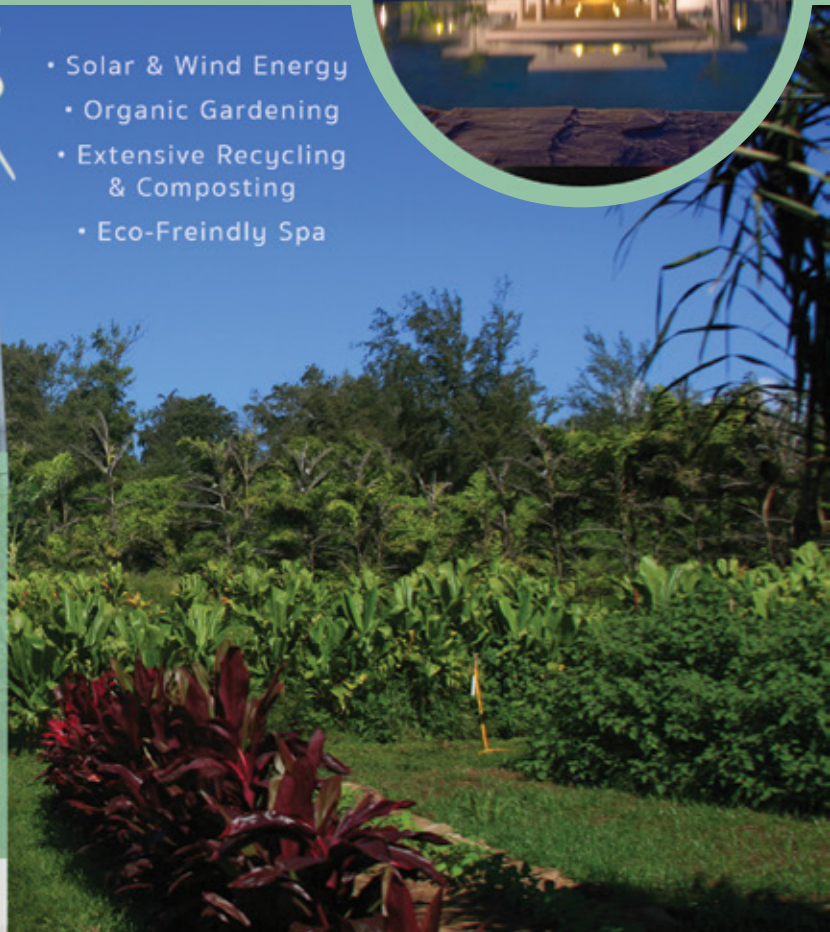
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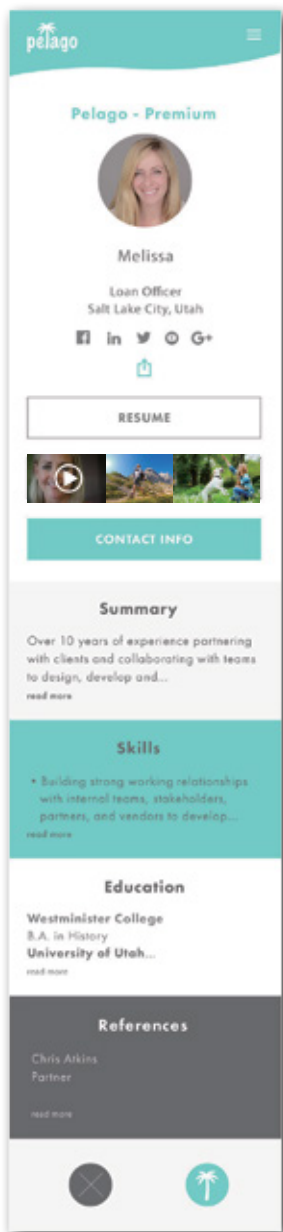




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Pelago is focused on the entry-level to mid-tier job market, historically a very underserved area of digital job seeking. Pelago also aggregates open positions from corporate sites and key job boards to give job seekers the largest database possible. Pelago allow employers to feature part time, full time, seasonal, temporary, commission, freelance, internship, contract, temp to hire, volunteer and other positions.

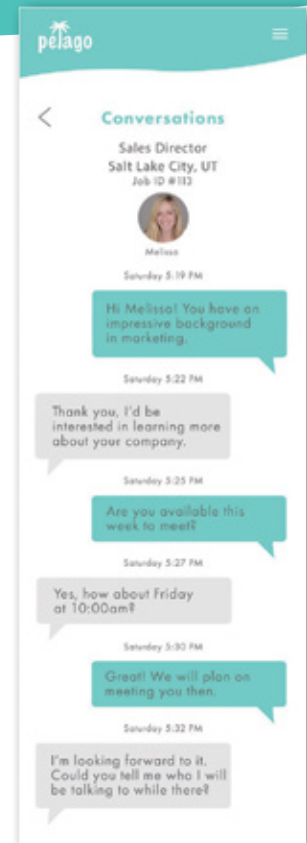
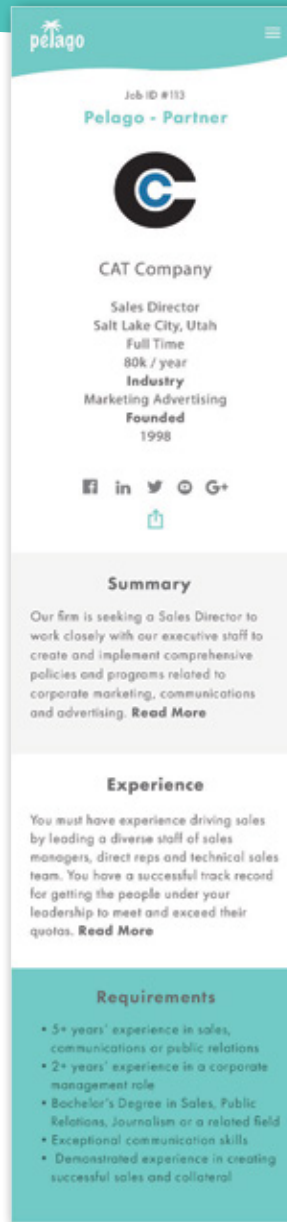
Pelago seeks to contribute to the larger community and has philanthropic efforts as a focus in all ventures. A portion of all Pelago profits support the Pelago Foundation, which focuses on educational opportunities, scholarships and community development projects worldwide.

PELAGO PLATFORM

Pelago is often summarized as the Tinder for jobs. Pelago's premise is to focus on people not paper, creating a positive environment for job seekers and employers to connect in a simple, sophisticated way. Pelago feels that both candidates and employers have more to convey than the traditional paper resume or antiquated job posting. It is simple to create and edit a profile for both a job seeker and an employer within the Pelago platform. Pelago allows both job seekers and employers to upload a pitch video featuring themselves and their work. Impact is gained from viewing a pitch video as you can gauge enthusiasm and get more in depth insight into qualifications and inspirations. Videos also provide a human element to the job seeking process – where the traditional resume and cover letter skip the critical human component.

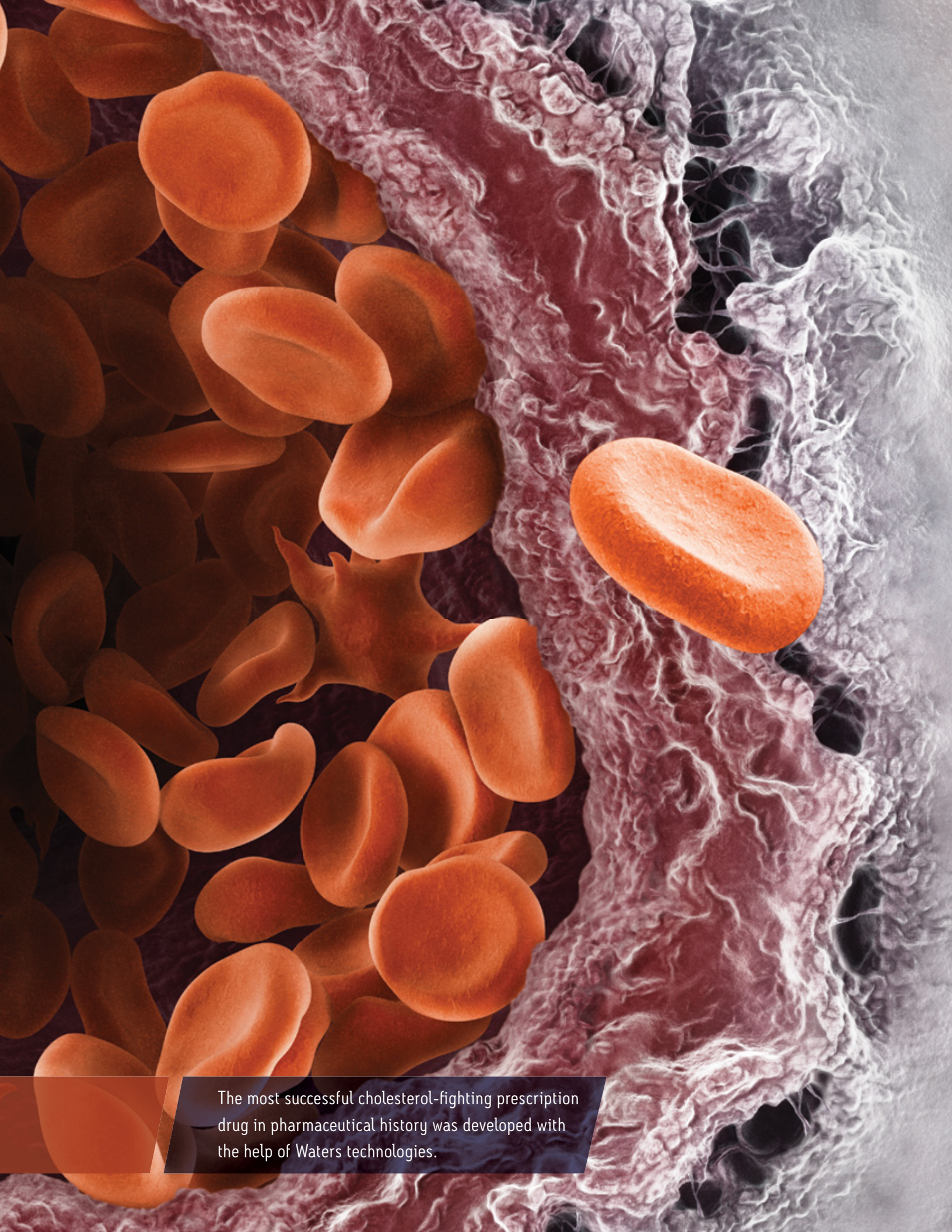
Pelago's platform allows for a quick and efficient transaction between job seekers and employers. There is a double opt in method for both job seekers and employers, as they must both match before they are able to connect and message. Pelago uses swiping technology and intelligent matching algorithms to connect job seekers and employers. The speed at which they can connect is the base of Pelago's platform which will revolutionize the process of job seeking and hiring. Direct connection allows hiring managers and job seekers to start an immediate conversation. Hiring managers can message with job seekers within the app and both parties can transact and vet one another, mutually deciding whether or not to move forward.

Swiping is a major aspect of the user experience within Pelago. Job seekers swipe right to apply for jobs or left to pass on positions while employers swipe right to indicate interest or left to eliminate the candidate for that position. Pelago allows job seekers to quickly and easily sift through a number of available positions, while allowing companies to easily review and instantly connect with matching, qualified candidates. Connections allow five days for a conversation to be started. Either the job seeker or the hiring manager may extend the first message.



PELAGO PEOPLE & PLACE

Stephanie Chard founded Pelago in Salt Lake City, Utah in 2016. Her inspiration for Pelago came from her frustration both as a job seeker and as a hiring manager. Stephanie discovered there was no user-friendly platform that facilitated job seekers and hiring managers to exchange information and connect in a user-friendly and expedited way. Stephanie also found that the traditional means of job seeking was not always positive, and generally frustrating, creating a negative association with the job searching process. Pelago allows users to transact efficiently while creating a positive experience around job seeking and hiring. Pelago, based in the Silicon Slopes, was created beyond the traditional borders of Silicon Valley and it is through these wider boundaries Pelago is able to invite a broader perspective into the organization. Stephanie is proud of Pelago's core values which center around developing a positive job searching experience while contributing to the community at large through the Pelago Foundation.



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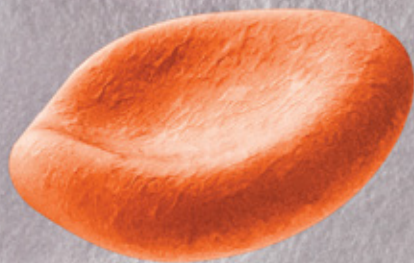
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