Reducing Pressures for Migration and Radicalization through "Sharing Economy" Initiatives

The BROCADE[1] Project**,** or "Peers Progressing"

Summary: The BROCADE (Building Resilient Opportunities in Culturally Aware, Diverse Environments) project seeks to reduce pressures for migration and radicalization caused by the threat of job loss by promoting economically viable communities that are productive, resilient to emerging challenges, and sustainable with local resources. It uses community-based, collaborative ("sharing") economic approaches and leverages emerging technologies and other tools that so far have benefitted mainly the privileged. Governance and institution-building will be key components, as will understanding what dignity, justice and fairness mean in whatever culture is at the center of a particular project. To quote Raymond Wilson, the goal is to "Make hope possible, rather than despair convincing."

The Problem: The world has no shortage of seemingly intractable security problems. We are in no position to address them all. Rather, this paper focuses on two interconnected "wicked problems" (migration and the changing nature of work) in some of the world's most challenged regions, and addressing them in novel ways that take advantages of innovations which lie largely outside the traditional world of security policy making.

At the end of 2015, there were over 60 million people[2] who had been forced to leave their homes as a result of either political violence or economic misfortune. Over the next 10-15 years, additional pressures to migrate may be caused by the potential loss of jobs to automation and artificial intelligence (AI), especially in the "youth bulge" areas of South Asia, sub-Saharan Africa, and the Islamic World.[3] This also may raise concerns about radicalization. Underserved regions of the developed world, such as Appalachia, also will be at risk. Opinions differ as to the timing and the extent of both migration and job losses, but there is broad agreement that the two together are likely to stress disadvantaged people even more. If nothing else, there will be significant turbulence, and the developing world is likely to be affected more than the developed.[4]

This is an important issue. One million migrants virtually overwhelmed European political systems in 2015, and there will be many times that number under 35 in youth bulge areas by 2030. Moreover, "industrial automation" will make it harder for the countries there "to achieve economic growth by moving workers from field to factories, and [they] will need to find new growth models."[5] Tom Friedman, in a powerful set of columns focused on migration from West Africa based on the failure of agriculture ["gardens"] and resultant efforts to keep migrants out of Europe ["walls"], concluded: "Gardens or

[1] Building Resilient Opportunities in Culturally Aligned, Diverse Environments

[2] UNHCR, Trends: Forced Displacement in 2015, http://www.unhcr.org/576408cd7

[3] See, for example, Theodore Hailes and Wells, L., "Applying Innovative Learning to a National Security Problem: Addressing the Challenges of Job Replacement by Automation and Artificial Intelligence," in *Innovative Learning: A Key to National Security.,* The Army Press, 2015, http://armypress.dodlive.mil/files/2015/12/Innovative-Learning-Web2.pdf, accessed on June 25. 2016. It's also a theme in the World Economic Forum's work on "The Fourth Industrial Revolution." This also could apply to underserved regions in the developed world.

[4] "March of the Machines: A Special Report on Artificial Intelligence," *Economist*, June 25-July 1, 2016, especially pp. 10-12

[5] *Economist (2016)*, p. 12

walls? It's really not a choice. We have to help them fix their gardens because no walls will keep them home."[6] Many in these same populations are vulnerable to radicalization.

Much has been written about the security threats posed by the twin problems of migration and job loss today, and the even more dangerous ones we are likely to face in the not-so-distant future. Instead of focusing on the threat of job loss this project examines ways to opportunities through community-based, collaborative economies that build on the technologies and other tools that so far largely have been used to create services that help the already privileged. In Raymond Wilson's words our goal is to: "make hope possible, rather than despair convincing."[7]

Proposal: The rest of this document outlines the first steps of a project, called BROCADE (Building Resilient Opportunities in Culturally Aligned, Diverse Environments), which will build a framework to:

- Improve economic and social opportunities in diverse, underserved, and conflict-ridden environments,
- leverage existing or emerging technologies that could help create "sharing economy" initiatives
- develop productive, resilient communities that are aligned with local cultures and that can sustain their futures, mainly with local resources.

To this end, we draw on several converging trends and emerging opportunities, for example:

(1) Robin Chase's *Peers, Inc*. construct[8] that leverages existing industrial strength "platforms," such as the internet [the "Inc." part] to take advantage of the "excess capacity" available in people around the world [the "Peers" part] to invent a "Collaborative Economy;"
(2) Multi-sector approaches, such as STAR-TIDES;[9] that integrate changes across people, organizations, processes and technology, and
(3) Related ideas such as innovative financing and distributed learning to promote economic opportunity, as well as tools such as blockchain to increase transparency and accountability.

Over time, emerging opportunities could be combined to empower "excess human capacity" by building on a variety of maturing "platforms." The goal should be to build economically viable communities that are culturally appropriate, and resilient. Some communities still may want to hunt lions, others may want to operate under Sharia law. The BROCADEconcept supports this. The key is make community environments satisfying enough to reduce people's desire to leave, or become radicalized. The emphasis is on security, defined broadly—"freedom from want and freedom from fear,"[10] which includes food security as well as economic opportunities, and protection from domestic violence and gang warfare, as well as cross-border attack.

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[6] Thomas Friedman, "Out of Africa, Part II," *New York Times*, April 20, 2016, http://nyti.ms/26eutfP, accessed June 25, 2016. See also Part I, April 13, 2016, http://nyti.ms/1SMcX8Q, and Part III, April 27, 2016, http://nyti.ms/1UgyX3U

[7] From *Resources of Hope* (published posthumously in 1989), p. 118 https://en.wikiquote.org/wiki/Raymond_Williams, accessed on June 25, 2016

[8] Chase, Robin, *Pees Inc,* http://www.peersincorporated.com/, accessed May 10, 2016

[9] www.star-tides.net, accessed on September 22, 2016

[10] Adapted from Franklin D. Roosevelt, Message to Congress, January 6, 1941. The UN also has adopted this in several variants, including "freedom from fear and want."

The attachment outlines more than a dozen "platforms" that could be adopted for BROCADE to promote "sharing" or "collaborative" economies. These could include high efficiency urban agriculture, local production (such as 3-D printing), distributed renewable energy leading to clean water, an emerging global internet supporting reach back telemedicine support and distributed learning, blockchains for secure contracts and land titles, etc. Hence the shorthand: "Peers Progressing."

These platforms involve "cool" tools that cross silos. They should be of interest to policy and research circles. But the key will be to align them to local needs and cultures (sociology always trumps technology), using approaches that users can sustain, in their worlds with their resources. Human concerns are central—use anthropological or ethnographic lenses to address people's needs, aspirations and identities, and their views of justice, fairness and respect. The project must connect with individuals, not just village elders or the local power structure. Listening will be essential, as will crafting a narrative. Ideas about funding sources and disbursement methods must be integrated early on. Strategies need to be "cumulative," building on each step to make the approaches more integrated and sustainable.

Such approaches could not only help insulate populations from at least some of the turbulence caused by automation and AI in the years ahead, but also can generate local opportunities. These new capabilities also promote the security that is essential for development and institution-building. In any case, BROCADE projects need to be designed and overseen (and ideally executed) by local stakeholders. Rules for governance and transparency will be very important.

Implementation:

We understand that no single, new project will be able to reach the full scope of BROCADE's goals Therefore, we want to start by hosting a one-and-a-half day workshop at which we will validate a core vision, begin developing plans for prototype studies, and start identifying sources of long-term and stable funding. Follow-on steps will proceed in three main ways:

- Use a regional focus that considers governance, sociological concerns, ethnology, etc. for the cultures there to identify plausible locations for community pilots in each region. Some could be rural communities, some refugee camps, some megacities. Remember that the ultimate connection must be to individuals
- Continue technical research into the rapidly-evolving platforms, recognizing that this largely will be done in analytical and organizational stovepipes.
- Provide an integration capability to tailor the platforms to the communities.

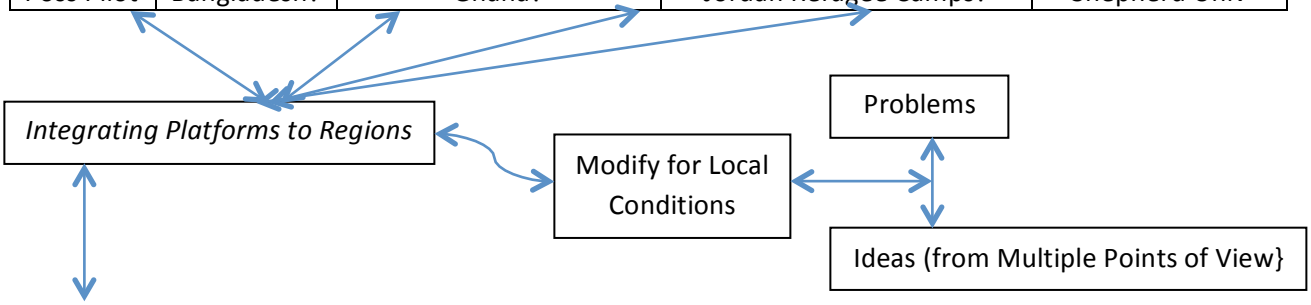
Workshop: The first step is a workshop, October 18, with a half-day follow-up on the 19th. It will include:

- Problem design: Summarize the basic issues; introduce the framework; show how to "frame" a problem within a complex ('wicked problems") environment; spell out underlying assumptions and emphasize the need review them often.
- Exploring regional characteristics: Focus on the human concerns in the various regions—using anthropological or ethnographic lenses to identify people's needs, aspirations and identities, their views of justice, fairness and respect, and what modes of governance might work best. Identify potential locations for pilots.
- Brainstorming the enablers (assets and platform possibilities): relevant emerging technologies; economic innovations such as "Peers, Inc." ideas; lessons learned from development; aspirations such as the Sendai Framework for Disaster Risk Reduction (DRR) and the Sustainable Development Goals (SDG); information sharing through STAR-TIDES, etc.

- Linking the enablers to the regions: Task a set of follow-on sessions with applying the approach to at least one pilot project in each region (sub-Saharan Africa, an Islamic area, South Asia, Appalachia). If there is time and interest, include a region of the developed world such as Appalachia or an American Indian reservation.
- Identifying desired outcomes: Develop the measurements, metrics and follow-up processes that need to be designed in from the beginning. Identify tools that could be useful, such as agent-based modeling for smart cities and other communities. Work out mechanisms for scaling.
- Promoting stakeholder engagement: Which combinations of people, organizations, processes and technologies need to be engaged for each pilot? What public-private partnership strategies would work best? How to engage decision-makers, funders, international students studying overseas?
- Identify a senior steering group to guide follow-on activities and build support.

We expect that this will help identify, and promote the development of, prototype projects that flesh out the general ideas through locally based projects in up to four of the world's most troubled regions, as outlined in the chart below.

Region	South Asia	Sub-Sharan Africa	Islamic World	Appalachia
Poss Pilot	Bangladesh?	Ghana?	Jordan Refugee Camps?	Shepherd Univ



Platforms (the "Inc." from "Peers, Inc.")	*STAR-TIDES Infrastructures*
High Efficiency Urban Agriculture/Food Security	Integrated cooking
Local Production and Logistics: 3-D printing	Logistics
Energy	Power
Water/Heating and Cooling	Water
Information and Communications Technology (ICT): ubiquitous connectivity via SkyFi; verbal interfaces; Innovative Learning	ICT
Health: Telemedicine; Cheap, widely deployable sanitation	Life Support, Sanitation
Low Cost Shelters	Shelter, Lighting
Heating and Cooling	Heating & Cooling
Governance, Community Design & Management, Security: Sensors; Blockchains for secure land titles and transparent transactions	
Public-Private Partnerships/Cooperation	People, org, processes, tech
Innovative financial arrangements: M-Pesa,	

These can't be done via standard three-year "pilots," followed by four-year "prototypes," etc. By then today's eight-year olds in the regions will be fifteen. The approach needs to demonstrate success rapidly, and scale quickly. The "sharing" economy offers possible models. Consider how Airbnb leveraged the internet and other platforms to build 650,000 beds and become the 2nd largest hotel chain in the world in four years. At the same time, we have to recognize that there will be so many moving parts here that

there will be a lot of learning going on (i.e. mistakes being made) if we are to move fast enough to make a difference, so the governance structure will need to allow for mistakes. The community-based National Solidarity Program (NSP) in Afghanistan is one of the few examples of an approach that built out quickly and successfully. Even so, the eventual efforts by Kabul to take over the NSP shows that BROCADE also will have to be how to insulate local successes from the tendency of central governments to try to control them.

These are the kinds of hard problems that DARPA typically takes on. However, they are even harder because much of the work being done by the partners we want to include has, so far, been divided into several stovepipes, which makes it harder to tackle than many DARPA initiatives. Lessons learned need to be shareable and scalable, but everyone must recognize that no lesson is ever learned until behavior changes. Planning needs to provide for incentives, as well as training, exercises and education to change behaviors.

Appendix

Existing or Emerging Capabilities that could be Leveraged ("Platforms")

- ***Agriculture/Food**:* Developments in high yield, resource-efficient, urban agriculture, e.g. the Tokyo farm that's growing 10,000 head of lettuce/day with a 100-fold increase in productivity over plots of land <http://www.gereports.com/post/91250246340/lettuce-see-the-future-led-lighting-helps-farming/>; peer-to-peer text-based sharing of farming best practices as in Kenya's wefarm.org; or restaurant-quality community kitchens for the local production of food products.
- ***Local production and logistics*:**
  - **3-D printing, maker spaces, or related techniques**, e.g. http://warontherocks.com/2015/12/3-d-printing-will-disrupt-the-world-in-ways-we-can-barely-imagine/, or local robotics labs such as WeRobotics "Flying Labs" http://werobotics.org/flying-labs/ and "wet" labs (both biotech and beverages) to create local tech jobs & reduce the "robotics divide"
  - ***Integrated, locally focused logistics***, linked to local, regional international supply chains
- ***Energy*:** The costs of renewable energy and distributed energy installations is falling rapidly http://www.huffingtonpost.com/adnan-z-amin/post_10557_b_8600240.html This can enable:
  - ***Clean water*:** Cheaper energy can produce low-cost clean water http://www.huffingtonpost.com/adnan-z-amin/post_10557_b_8600240.html,
  - ***Heating and cooling***: for example, cooling for storage of agricultural produce and medicines, plus heating when necessary. There also is a potential to tap into heating and cooling as by-products of other services within communities (the circular economy as enabled by IoT) http://www.iea-shc.org/data/sites/1/publications/2012_SolarHeatingCooling_Roadmap.pdf
- ***Information and Communications Technology (ICT)*:** The potential global availability of high speed internet through "SkyFi" and other approaches http://www.economist.com/news/science-and-technology/21647957-number-companies-have-bold-ambitions-use-satellites-drones-and-balloons; This can expand opportunities for local populations:
  - **Expanded access to information:** For example, accessing the internet through voice interfaces (also called Conversational User Interfaces [CUI], or chatbots), and improving image recognition. Both will have huge value to Illiterate populations. In some cases, CUIs can be used to convert

verbal responses into bureaucratically acceptable paperwork, such as the one recently written by a teenager that has led to over 160,000 parking tickets being overturned in London and New York https://www.theguardian.com/technology/2016/jun/28/chatbot-ai-lawyer-donotpay-parking-tickets-london-new-york

- **Innovative learning:** tailored to local needs, cultures and resources. Some argue that "digital learning" is the most powerful tool to enable young people to participate in the "knowledge revolution." This also enables job training, adult education and continuing, life-long learning. http://www.etc.cmu.edu/engage/ but having security will be critical for this learning to happen.
- ***Telemedicine:*** The provision of improved medical care through "reach back" telemedicine support built on improved ICT http://www.hcs.harvard.edu/hghr/print/spring-2011/telemedicine-developing/

- ***Cheap, widely deployable sanitation***: Innovative sanitation solutions can be addressed in a value chain framework http://cdn.intechopen.com/pdfs/33283/InTech-Sanitation_in_developing_countries_innovative_solutions_in_a_value_chain_framework.pdf

- ***Low cost housing***: Use culturally appropriate, energy-efficient structures, using local materials https://sheltersforall.wordpress.com/category/developing-countries/. See also Travis Price's work on using shipping containers for modular shelters.

- ***Governance, Community Design & Management, Security*:**
  - ***Rapidly deployable sensors, lighting, GIS***, etc. to improve transparency and situational awareness; protect resources, etc. http://nvre.org/pdf/kibera-2013.pdf; protect resources, etc. Connected Conservation: Using Drones, Sensors and Wi-Fi to Stop Poachers (21Apr16)
  - ***Blockchains*** to help provide reliable land titles and increase transaction transparency https://www.cryptocoinsnews.com/bitland-blockchain-initiative-seeks-to-create-reliable-land-titles-in-africa/ Blockchain data centers require reliable power; hence the plan includes solar power centers to provide hubs for WiFi during power outages. These can improve risk management in integrated, locally focused logistics, linked to international supply chains, for example: http://www.econstor.eu/bitstream/10419/59779/1/329895168.pdf
  - ***Public-private partnership/cooperation***: Match risk sharing to local conditions; consider innovative approaches such as the Coca-Cola partnership with USAID in Haiti http://www.coca-colacompany.com/coca-cola-unbottled/the-often-bumpy-road-to-progress/

- ***Innovative financial arrangements***, e.g. mobile money such as M-Pesa; crypto currency; and crowd-funding, e.g. IndieGoGo; possibly Universal Basic Income (UBI) in some areas

Doubtless there are others, but these could be places to start.