Technology permeates our everyday activities, but its reach is even larger than that: governments and businesses are increasingly using their products and services to reshape, reimagine, and transform how our society works, communicates, and even governs. According to our global 2018 Accenture Technology Vision survey, 82% of public service, business and IT executives agree that technology is enabling their organizations to weave themselves seamlessly into the fabric of citizen’s lives.

Savvy border services organizations know that this level of connection will require a new relationship with citizens, one that’s based not only on the products and services it provides, but also on its goals and values. This year’s Accenture Technology Vision identified five emerging trends that are transforming border services and empowering agencies to blaze new trails for operational success.

AI TO BENEFIT BORDER MANAGEMENT

Whether by processing visa applicants or securing international shipments, AI is becoming a powerful member of the border management workforce. For agencies, however, developing and deploying AI is no longer just about training it to perform a task. With AI systems making critical decisions that affect the movement of people and trade, agencies must harness the technology to function similarly to a responsible, productive member of society.

The organizations with the best data will create the most capable AI systems. To that end, an agency’s data scientists must use care when selecting taxonomies and training data—actively working to minimize bias. When data inputs are well documented, organized and properly labelled, border agencies will build a strong foundation for responsible AI use.

Building and using AI presents unique challenges, particularly with regard to public trust. Over three-quarters (78%) of the public service executives we surveyed said that they hope to build trust by being transparent in their AI decisions. To that end, border agencies must think carefully about their answers to questions relating to responsibility and liability when leveraging AI. The UAE and UK governments recently announced a new council or office for AI respectively, which will help develop policies around the responsible use of AI in various sectors.

Border services organizations that dive head first into AI development without considering their AIs as something that must be “raised” to maturity will struggle to catch-up with new regulations and public demands—or worse, have strict controls placed upon their use of AI at the border.
EXTENDED REALITY: THE END OF DISTANCE
Forays into the use of virtual reality (VR), augmented reality (AR) and extended reality (XR) are solving a tactical pain point that border agencies share: distance. Today, a customs compliance verification or inspection can be carried out in person or remotely using AR, enhancing the speed and security of international freight handling. A customs officer, assisted by an AR recognition system, can determine whether or not a particular shipment complies with applicable trade regulations.

XR is also helping to resolve workforce development issues associated with distance. Using XR, border agencies can bring trainers "on-site" from anywhere or have students virtually "travel" to an instructor. Training scenarios can be set up for any border location and adjusted to provide a first-hand experience of different situations. For example, in the US, the TSA is using a related technology named ScreenAdapt to help border agents identify potentially dangerous items or contraband in baggage. The system adapts to each user, learns about them and so is able to personalise visual training for each agent.

Dubai Customs recently deployed innovative smart Inspection glasses, based on Google Glass technology, that display a container’s customs declaration, risk assessment and x-ray images on a head-mounted display. These glasses have reduced the time it takes Dubai Customs to carry out inspections from two days to just a few minutes.

Extended reality is pushing public service agencies to create new solutions that bypass many of the distance-based challenges they face today—a clear advantage for leading border agencies that embrace it. As XR becomes pervasive, immersive experiences will eliminate the most important distance of all: the distance between where the border is operated today and where they want to be in the future.

DATA VERACITY
The global economy runs on live information, and organizations are betting big on advances in data-hungry technologies. For 2018, Gartner estimate AI investments will reach US$19 billion, while Internet of Things (IoT) investments are estimated to reach $15 trillion between 2017 and 2025. Unfortunately, just over half (53%) of our survey respondents feel confident in the quality of data their organization collects and uses.

While border agencies are more data-driven than ever, inaccurate and manipulated information threatens to compromise the insights that they rely on to plan, operate and grow. Agencies can address this vulnerability by building confidence in three key data-focused tenets: provenance – verifying the history of data from its origin throughout its life cycle; context - considering the circumstances around its use; and integrity - securing and maintaining data.
Beyond data veracity, customs agencies are also realising how blockchain technology can help bridge the trust gap that often arises between traders, trading countries and even between different government departments when it comes to sharing data and ensuring its integrity. A digital identity based on blockchain technology could eradicate those misgivings for both large trading companies and individual consumers. The establishment of digital identities based on blockchain technology will be beneficial for traders, goods, containers and even documents as their ‘identity’ would could be proven at points along the supply chain thus increasing trust and reducing the opportunity for fraud.

To help with this process, border agencies should create a “data intelligence” practice to embed and enforce data integrity and security throughout the organization, while adapting existing investments in cybersecurity and data science to address data veracity issues. This practice must also understand the context of data, recognizing when insights don’t align with accepted knowledge. Some agencies, such as the US Department of Homeland Security, are already beginning to monitor social networks for risk verification and vetting purposes.

Border agencies must also build the capability to track behaviour associated with data as it’s recorded, used and maintained. With this knowledge, border agencies can provide cybersecurity and risk management systems with a baseline of normal behaviour. Using a robust data intelligence practice to uncover these processes will allow border agencies to reduce noise in data, so that real threats stand out.

FRICIONLESS BUSINESS
Border agencies operate through strategic partnerships, both public and private, and legacy systems can be a major impediment to growth. To build a strong foundation for technology-based partnerships, border agencies should adopt microservices architectures, blockchain and smart contracts. Microservices are not a single piece of technology, but rather an approach to architecture. It delivers internal benefits like application scalability and reliability, but it is also vital for building technology partnerships. A microservices architecture will push border agencies to clearly define the services they offer, allowing them to discover new sources of revenue and enabling collaboration.

Currently, Singapore Customs is using the National Trade Platform (NTP), an open-innovation platform, to develop both business-to-business (B2B) and business-to-government (B2G) relationships. Using a microservices architecture, coupled with access to various data sources, NTP enables its users to create new value-added services both for the border agency and the private-sector businesses in the ecosystem.

If microservices is the key to scaling and integrating partnerships, blockchain will be critical to managing and operating them. Border agencies will be challenged to maintain a higher volume of partnerships than ever before without sacrificing the integrity or security of their products and services. Blockchain will address this complexity by acting as a surrogate for trusted relationships.

THE INTERNET OF THINKING
Robotics, immersive reality, artificial intelligence and IoT devices are bringing a new level of technological sophistication to the physical border. The next generation of technology demands an overhaul of existing infrastructures, with a balance of cloud and edge computing, and a renewed focus on hardware.

Border agencies need to extend their infrastructures to reach into the dynamic physical environments they want to serve. Recently, Dubai International Airport unveiled plans to replace security checkpoints with virtual aquarium tunnels, each with more than 80 cameras to verify the identity of passengers. Meanwhile, in Singapore, the airport has introduced an ‘intelligent airport experience’ for certain airlines, which offers passengers a seamless journey, from check-in to boarding, through the power of facial recognition technology.

Border agencies must also help their workforce develop hardware-focused skills. Building or leveraging custom and specialized hardware means shifting from the “one-size-fits-all tasks” approach that was popular during the last decade.

To drive AI, robotics, and other revolutionary technologies to their full potential, border agencies must make a significant effort across key areas of business processes and strategy, from service design, to infrastructure transformation, to hardware considerations. The well-earned result will be truly intelligent environments that ensure a seamless, secure experience for passengers and trade at the border.

CONCLUSION
The technology advances outlined in this year’s Accenture Technology Vision are not all pointing to a future for borders that is more collaborative, connected and intelligent. Border agencies must be bold and harness new technologies to advance mission success. This requires devising a digital strategy for their organisation that includes new rules, new collaborations and new operating standards for the digital age. Positive and productive collaboration between border organizations, private sector partners and the customers they serve will help secure outcomes from which all stakeholders will benefit. These entities that take the lead and innovate by creating pilot programs or larger technology investments will establish their place at the center of the new digital ecosystem – while those who don’t will likely be left behind.

ABOUT THE AUTHOR
James Canham is managing director, Accenture Border Services. His role focuses on helping clients to tackle the issues around facilitating travel, speeding up processing and adding security at the world’s borders. His responsibilities involve customs, border and identity management and the increasing virtualization of physical borders. In addition to his current role, Jim also serves as a member of the Confederation of British Industry’s London Council. He has also written and contributed to a number of publications on customs and border management, and advised the World Bank in developing their Border Management Handbook.

Jim gained a Bachelor of Arts in Geography from Kent University, a Master of Science in Environmental Economics at the University of London and an MBA from the ENPC International School of Business Management in Paris.

ABOUT THE ORGANIZATION
Accenture is a leading global professional services company, providing a broad range of services and solutions in strategy, consulting, digital, technology and operations. Combining unmatched experience and specialized skills across more than 40 industries and all business functions – underpinned by the world’s largest delivery network – Accenture helps clients improve their performance and create sustainable value for their stakeholders. With 449,000 people serving clients in more than 120 countries, Accenture drives innovation to improve the way the world works and lives.

ENQUIRIES
www.accenture.com